

TEXTILE BULLETIN

VOL. 65

DECEMBER 15, 1943

NO. 8

"THE LONGEST LASTING GIFT OF ALL"

BRINGS YOUR WORKERS
PEACE OF MIND

WHAT a satisfactory way of saying "We think a lot of you" to Employees by presenting them with this time-tested Provident protection on a low-cost wholesale basis.

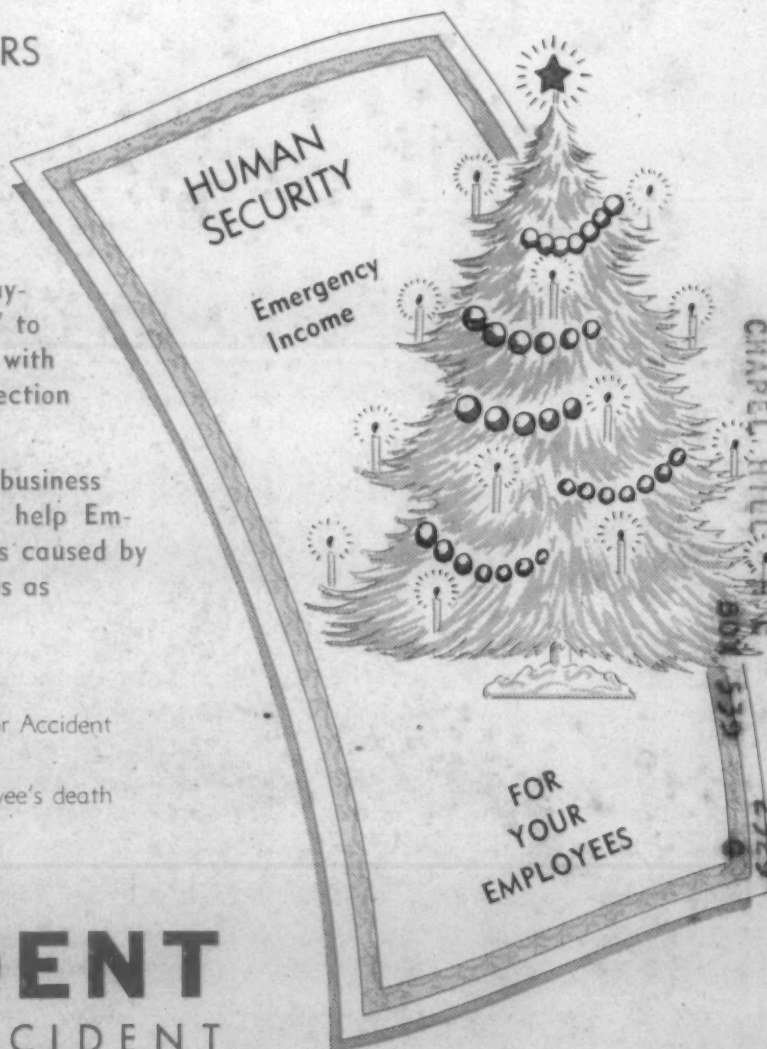
Thousands of industrial and business firms now have these plans to help Employees meet the extra expenses caused by such sure-to-happen emergencies as

- Death in the Family
- Loss of time through Sickness or Accident
- Hospitalization or Operation
- Aiding Dependents upon Employee's death
- Providing Maternity Benefits

PROVIDENT
LIFE AND ACCIDENT
INSURANCE COMPANY

CHATTANOOGA Since 1887 2, TENNESSEE

● OVER ONE MILLION WORKERS AND DEPENDENTS NOW PROTECTED





A SUCCESSFUL LANDING *depends on a lot of "little things"*

Nothing can be left to chance in today's tough military operations. Every detail must be carefully planned in advance and every piece of ordnance and equipment, down to the smallest item, must be in perfect condition if the mission is to succeed.

Operating a textile mill under present conditions is a tough assignment too. Not only must enormous quantities of goods be produced week after week, but quality also

must be maintained to meet rigid Government specifications.

No mill can do the job with faulty equipment, and this applies to those little travelers as well as the big machinery.

Don't overlook this small but important item in your spinning room. Be SURE with U. S. Ring Travelers—the travelers that are precision-made to exacting standards . . . each one perfectly balanced, shaped and weighted.

U.S. RING TRAVELER COMPANY

AMOS M. BOWEN, President and Treasurer

PROVIDENCE, R. I.

GREENVILLE, S. C.

Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Ne-Bow Vertical

Bowen Patented Bevel Edge
Bowen Round Point Travelers
Bowen Improved Vertical Offset
Bowen Flat, Oval and Round Wire Travelers



A Traveler for Every Fibre

Published Semi-Monthly by Clark Publishing Company, 218 W. Morehead St., Charlotte, N. C. Subscription \$1.50 per year in advance. Entered as second-class mail matter March 2, 1911, at Postoffice, Charlotte, N. C., under Act of Congress, March 2, 1897.

INDEX TO ADVERTISERS - PAGE 45

THIS IS NO. 42 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation



(The second of a series of articles on tools used with Universal Winding Machines)

SPECIAL TOOLS USED ON NO. 50 WINDING MACHINE

The No. 50 winding machine requires the use of the following special tools:

Multi-Purpose Wrench.....	50-2587
Cam Roll Gauge.....	60-922X
Traverse Bar Bearing Gauge.....	50-2865
Spring Lifter Hook.....	50-279
Grease Gun.....	50-2725
Oil Gun.....	90-846
Safety Screw Wrenches—Allen-Type	

Where the Precision Slub Catcher is used, the following is included:

Slub Catcher Wrench.....	50-2832-2CA
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Depending upon the type of gainer mechanism either of the following is necessary:

Gear Gain Wrench.....	50-339
Wind Pulley Adjuster Wrench (Belt Gain).....	50-281

The following is used only on machines having clutch drive and Belt Gain:

Clutch Wrench.....	50-276
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Two of these special tools are described below; descriptions of the complete group will be found in "Getting the Most from Winding 42-F," free upon request.

MULTI-PURPOSE WRENCH



Fig. 1 Multi-Purpose Wrench 50-2587

This is commonly known as the Burke-type Wrench. It has six distinct purposes. It has two openings at one end, one opening at the other end, and a slot in the straight section.

1. The larger of the two openings at the larger end is used when adjusting the Breakage Lever (50-2093-3C2). This Lever should be set so that when an end breaks, the Stopping Lever (50-2094-3) will contact the Stopping Lever Wheel (50-1271-25X). When the machine is in running position the Stopping Lever should clear the Stop-ping Lever Wheel.

Wrench 50-2587 is used to loosen Adjuster Nut NU-117CA and Stopping Screw 50-492-7, which permits the eccentric Adjusting Screw 50-489-2 to be turned by hand. When the proper setting of the Breakage Lever has been determined, the Adjuster Nut and Stopping Screw are re-tightened.

2. This same larger opening is used to adjust Thread Rod Nut NU-126CA on the Precision Cleaner (Fig. 2).

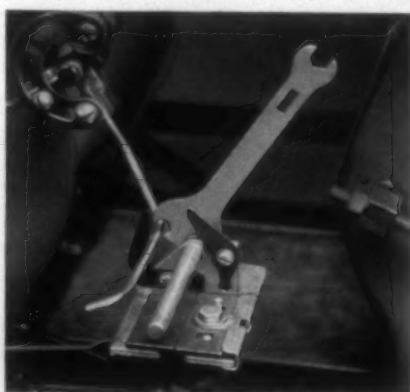


Fig. 2 Illustrating use of Multi-Purpose Wrench on Precision Cleaner.

3. The smaller opening in the larger end fits Nut NU-124CA on the upper end of Tension Rod 50-245 in any tension assembly.

4. The single opening at the smaller end fits Tension Adjuster Screw Nut NU-122 on the Anti-Wear Tension assembly. The setting of this Adjuster Screw is made at the factory when the tension grids are assembled, and any further adjustment is required only in the rare case of the two grids getting out of adjustment. The Tension Adjuster Screw should never be used for changing the amount of tension on the yarn. (See "Getting the Most from Winding" Bulletin 136, page 10.)

5. The slot in Wrench 50-2587 serves two purposes. On a No. 50 Winding Machine having Belt Gain, the slot is used on the end of the Gainer Pinion Shaft (50-53-4X) to tighten the Gainer Pulley (50-56).

6. The slot is also used when replacing the wheel on the Automatic Measuring Clock (Fig. 3). The shaft (A) is flattened at the remote end, permitting the use of the slot to tighten the shaft on the wheel.



Fig. 3 Slot in Multi-Purpose Wrench used to tighten shaft on Automatic Measuring Clock wheel.

SLUB CATCHER WRENCH

This Wrench is used only in connection with the Precision Cleaner. It is purposely made light in weight in order to avoid use of excessive pressure by hand when making a setting.

At the start of the adjustment, the Wrench should be placed over the Adjuster Screw 50-2801-2CA (A, in Fig. 4) with the offset lower part (B) facing the operator. Since the Adjuster Screw has a right-hand thread, it will be loosened by turning the Wrench to the left (counter-clockwise). A continued light turning of the Wrench will eventually bring it in contact with Stationary Pin 50-2902-2CA (C). This will obstruct further movement of the offset part, but the shank or leg of the Wrench will continue to the left (the Pin acting as a fulcrum), opening the Slub Catcher blades.

With the Thickness Gauge inserted between the blades, the Wrench can be released, bringing the blades together. The Thickness Gauge should contact the entire length of the blade edges. Continued turning of the Wrench to the right will tighten the Adjuster Screw, fixing the blades in correct position.

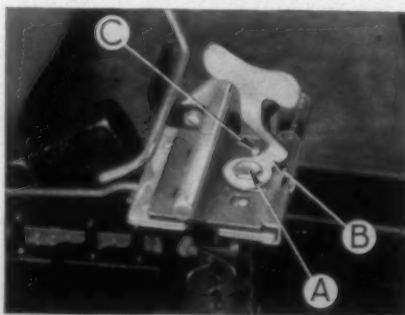


Fig. 4 Slub Catcher Wrench, 50-2832-2CA.

See our Catalog in TEXTILE YEARBOOK 43-GMW-42

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE

BOSTON

PHILADELPHIA

UTICA

CHARLOTTE

ATLANTA

*Reg. U.S. Pat. Off. and Principal Foreign Countries



“...and everywhere that Mary went...”

EVERYWHERE” is not strictly true, of course, because the trident truck that we refer to would hardly “follow her to school one day”. However, when Mary is working on the Automatic Spooler, this truck is almost as faithful as the lamb in our childhood poem. As Mary moves along, filling empty bobbin pockets, taking off full cheeses, and putting on starters, the truck is always by her side. It runs on ball bearing wheels on a track in the floor and a gentle push on a padded, spring-mounted bumper

is all Mary has to give to nudge it along as she works. This truck carries two tridents, each of which will hold 15 full cheeses or starters. Also, it is the same height as the trident transfer table, so Mary can slide the full tridents off without any heavy lifting. . . . This is one of the many ways in which we took into consideration convenience for the operators when we designed the Automatic Spooler. And it is one of the reasons why operators on Automatic Spoolers are able to turn out more war goods, faster, with less effort.

For Example . . .

The following production figures are taken from the spooler department of a mill now running goods for war purposes:

Count	31s
Ring	1 $\frac{3}{4}$ "
Traverse	7"
Pounds per hour per Spooler	415
Beams per cheese at 29,000 yds. per Beam	2

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

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FRAMINGHAM, MASS., U. S. A.

GREENVILLE, S. C., U. S. A.

MANCHESTER, ENGLAND

RAYON REPORTS

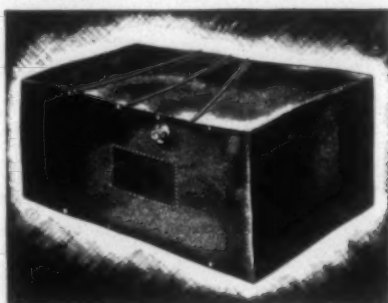
Published Monthly by American Viscose Corporation, New York, N. Y.

DECEMBER, 1943

SELF-SEALING GASOLINE TANKS CALL FOR RAYON

The self-sealing fuel cell, lodged in the wings of combat planes, is helping to save the lives of American airmen. Important to the construction of the self-sealing gasoline container is its outer layer which is made of rayon fabric coated with rubber.

Rayon was chosen because it provides the required strength and protection to the cell as a whole, and because it has the necessary lightness. Rayon fabrics can be made with a strength-weight ratio that is greater than that of many other fabrics. Every pound saved in the construction and installation of permanent plane equipment can be applied to provide heavier armament, a larger supply of ammunition, greater gasoline capacity or greater horsepower.



"VINYLON"*** HELPS PRODUCTION OF VITAL WAR MATERIALS

Acid-resistant filter cloths made of "Vinyon," the vinyl resin yarn manufactured by the American Viscose Corporation, are proving of value in the production of such vital war materials as high-octane gasoline, synthetic rubber, explosives and dyestuffs.

Because of Vinyon's high resistance to acids and alkalis, a number of production economies are possible. Sulphuric, nitric and hydrofluoric acids, aqua regia, caustic soda, potash, and many other equally destructive substances can be successfully filtered on a practically continuous basis through Vinyon fabrics. The result is fewer filter changes, longer and more continuous service and uninterrupted production. Vinyon, then, offers definite advantages to the chemical, pharmaceutical and dyestuffs manufacturing industries, as well as to many types of laboratories.

An especially interesting type of industrial utilization for Vinyon filters is in electrochemical processes, where they serve to keep plating solutions in condition. Anode bags of Vinyon cloth cover the anode and prevent particles from en-

tering the solution.

As a filter, the "Vinyon" cloth serves scores of different industries in scores of different ways. The government is currently the largest single user, but many industrial concerns are being supplied. And their number will probably grow, after the war, as will the uses for Vinyon.

SUGGESTED READING FOR CARPET INDUSTRY



now available.

This article should be read by all floor covering manufacturers and retailers since it gives the latest information on rayon and rayon-wool blended rugs. The qualities of soil resistance, cleanability, and durability are discussed authoritatively in this paper. To receive your copy, simply address your request to American Viscose Corporation, 350 Fifth Avenue, New York City.

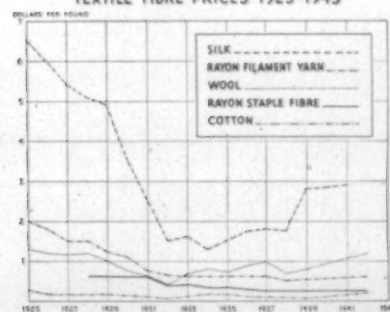
A new informative paper titled *Special Rayon Fibers for Floor Coverings* written by Joseph A. Truitt of the Textile Research Department of Marcus Hook is

TREND OF RAYON PRICES

The chart below clearly shows the trend of rayon prices and their stability in recent years.

From slightly above \$2.00 per lb. in 1925, the price of 150 denier viscose rayon filament yarn has steadily declined and today stands at 55¢ per lb. The price of

TEXTILE FIBRE PRICES 1925-1943



1.5 denier, 1 9/16 inch viscose rayon staple fiber has declined from 60¢ per lb. in 1928 to 24¢ per lb. in 1943.

Of particular interest is the stability of rayon prices since the war started in 1939. This stability has been translated to the cost of living and has been an important factor in retarding inflation in the textile field.

**T. M.—C. & C. C. G.

MAKE USE OF 4-PLY SERVICE

- 1 PRODUCT RESEARCH**
Helps you get the right yarn.
- 2 FABRIC DEVELOPMENT**
Helps you design new fabrics.
- 3 TEXTILE RESEARCH**
Helps solve production and finishing problems.
- 4 "CROWN"* TESTED**
Helps provide scientific selling facts.

AMERICAN VISCOSE CORPORATION

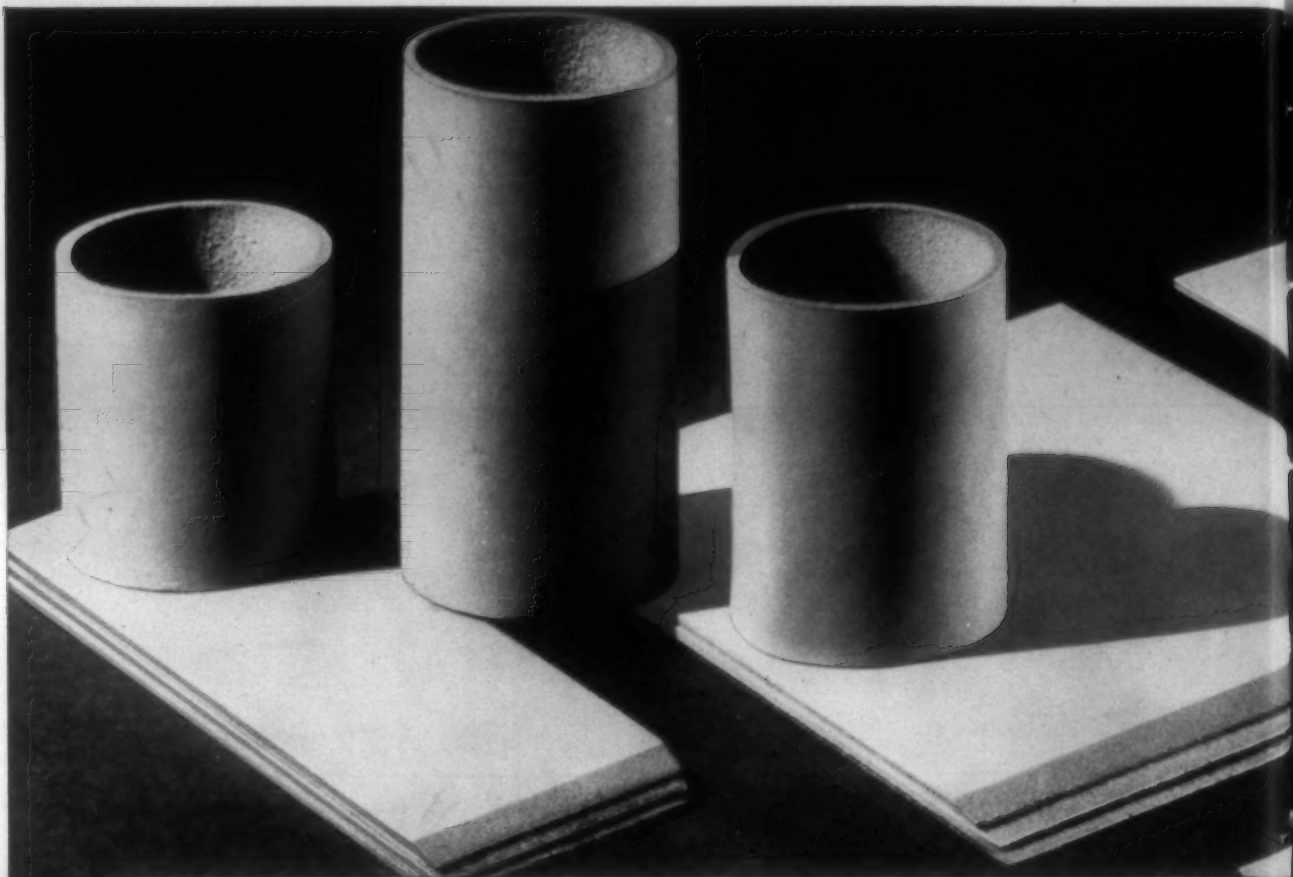
Producer of
CROWN* Rayon Yarns and Staple Fibers

Sales Offices: 350 Fifth Avenue, N. Y. C. 1; Providence, R. I.; Charlotte, N. C.; Philadelphia, Pa.

Plants at: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, Va.; Meadville, Pa.; Front Royal, Va.

*Reg. U. S. Pat. Off. Copy 1943, American Viscose Corp.





First in the Field... **AND STILL FIRST CHOICE**

Cotton spinning mills select Lawrence Chrome Apron Leather for their roving and spinning frame aprons more often than any other type.

The first Lawrence Chrome Aprons were used at the very introduction of long-draft systems, and no other material has been successful in demonstrating superiority in —

DRAFTING QUALITIES. The surface is extremely fine-grained, providing a frictional contact with the yarn which holds even the shortest fibres in line, controlling them for a positive draft. It resists abrasion over a long period of time, and being mineral-tanned, reduces static troubles.

TROUBLE-FREE SERVICE. The internal structure of Lawrence Chrome — fibres interwoven in all directions — resists permanent displacement due to the rolling

pressure of the traversing yarn. Result: no "belling", due to lateral stretch. Lawrence Chrome also absorbs oily or sticky deposits rather than leaving them on the surface to contaminate the yarn.

LONGER LIFE. The tightly-knit fibrous structure of Lawrence Chrome is highly resistant to wear.

PLUS — CONVENIENCE IN REPLACEMENT

When replacing, new aprons can be applied individually without costly shutdowns — even in bottom positions — since they are furnished open-end.

Apron manufacturers in important textile centers know that Lawrence quality is uniform. Lawrence Chrome is standard with Whitin Machine Works. Specify Lawrence Chrome for better yarn and longer apron life.

LAWRENCE CHROME LEATHER
1st Choice for Aprons

A. C. LAWRENCE LEATHER CO.

BOSTON, MASS., PEABODY, MASS., GREENVILLE, S. C.



"CURSES!" CRIED EYEBROWS "I'VE BEEN PLUCKED!"

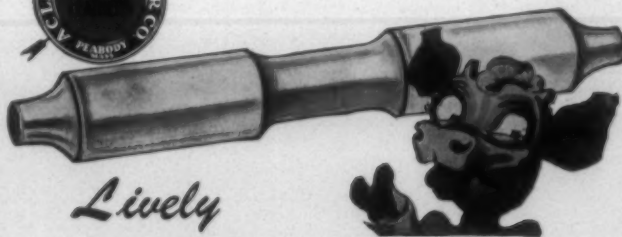
If yours is one of those mills where yarn quality suffers now and then from the antics of that archgremlin, *Eyebrows* — listen to what *Eyebrows* has to say about Spinna Calf.

"Just the other day, I was enjoying myself, befouling the yarn with clearer waste, when in they came with some spinning rolls covered with Spinna Calf. Well, I knew I couldn't get anywhere with Spinna. Spinna has an improved *finish* that doesn't even allow me to get *started*. Its high friction (you can test it yourself, pressing a Spinna cot against a table top) carries waste right onto the clearer . . . and it makes for better drafting, too!"

Lawrence's Spinna Calf is no friend of other Spinning Frame Gremlins, either. Being triple-resilient*, it laughs off *Hard Ends* and does away with *Hollowing-Out*. *Old Man Wear* has a slow time of it, due to that strong calfskin grain surface. And *Static* just isn't in the picture, because Spinna has a "no-lick" finish.

Clear the gremlins from your spinning frames by saying to your roll coverer: "Spinna Calf."

*1. The individual fibres compress and recover. 2. The fibre network adjusts itself to strain, and recovers. 3. The air in between is expelled, then returns. No other material has all three forms of resiliency plus Spinna Calf's strong wearing surface.



Lively

SPINNA CALF

ROLL COVERING

it's Triple Resilient

TUBIZE CHATILLON CORPORATION

Now the

TUBIZE RAYON CORPORATION

To make things simpler...

ON NOVEMBER 12, 1943 our stockholders voted to change our corporate name from Tubize Chatillon Corporation to Tubize Rayon Corporation.

Practically speaking, it's a good thing. The name is simpler, and identifies us at a glance with the Rayon Industry.

From the sentimental viewpoint, it's not so easy to change a name. Under the old title, during the years in which the consumption of rayon in America grew from 118,800,000 to 650,000,000 pounds per year, Tubize kept steady pace, developing its service and improving its product with each year.

Today, under our new name, Tubize Rayon Corporation, we take our place as one of the important producers of both Acetate and Viscose Rayon Yarns; and of woven and knitted fabrics made of these yarns.

TUBIZE RAYON CORPORATION
MANUFACTURERS OF TUBIZE RAYON YARNS AND FABRICS
EXECUTIVE OFFICES: 2 PARK AVENUE, NEW YORK 16, N. Y.

Keep quality on all fronts!



Uncle Sam demands quality dyes for his fighting forces. But millions of men and women on the home front, including war workers, want fast-color clothing too—colors that will serve a long and useful life.

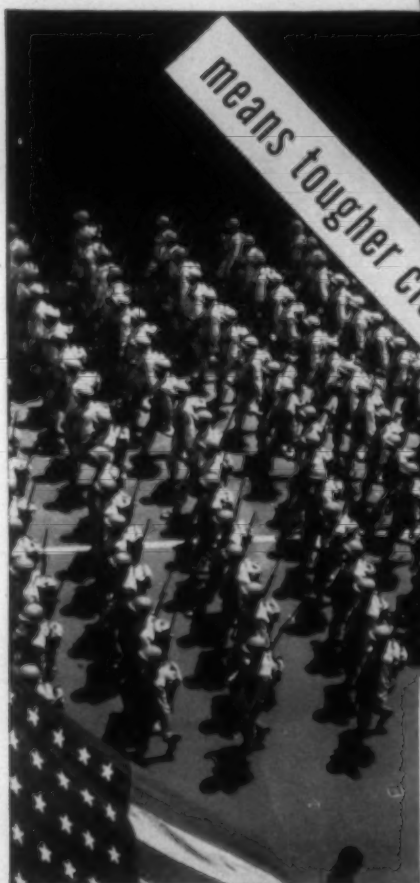
Keep up your quality standards. To protect your markets—expand your business tomorrow—use the highest quality dyes, vat dyes, wherever and whenever they can be applied. E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Dept., Dyestuffs Division, Wilmington, Delaware.

Keep on Buying War Bonds



BETTER THINGS FOR BETTER LIVING... THROUGH CHEMISTRY

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.
CARD CLOTHING



Here they come — Millions Strong

Each must be equipped with 250 pounds of shirts, sox, sheets, webbing, duck, and other items made of cotton, in addition to about 40 pounds of suiting, blankets, overcoating, and other products made of wool. All of this material must be processed by card clothing. *This is the initial step.*

Add to this the quantities of work clothes needed by war workers—on top of other civilian needs, and you see the "licking" your card clothing is taking.

Under these conditions you will appreciate the smooth performance of Tufferized Card Clothing. The Tufferizing Process is our exclusive patented process for making a more accurate and uniform product. Carders everywhere tell us it stays on the job longer, gives more uniform carding with less waste, and results in a nice smooth finish to coarse or fine yarns.

Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets, Top Flats Recovered and extra sets loaned at all plants Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye & Regular Wire Heddles

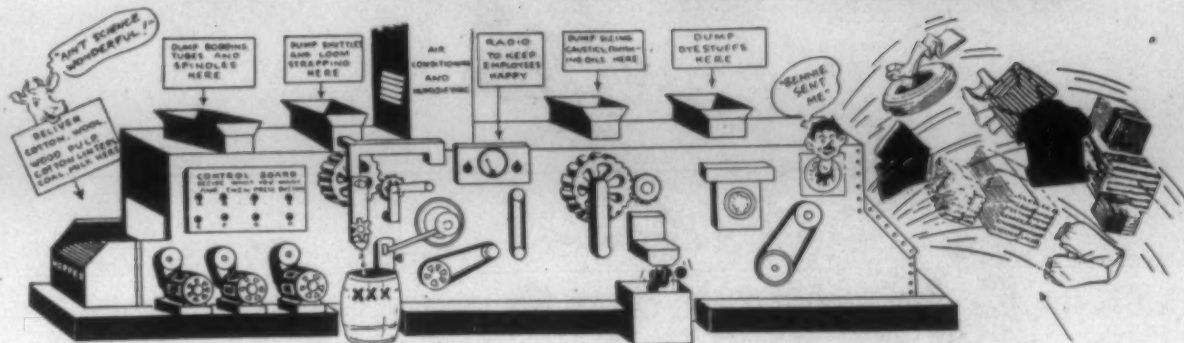
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WORCESTER, MASSACHUSETTS

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- G-SUITING CLOTH
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TO GET WHAT YOU WANT HERE
PRESS BUTTON ON CONTROL BOARD

NEW ERA MACHINERY CO. LTD

From the Original by COTTON'S Staff Artist

Our Post-War Looms

Will Not do all the artist's imagination foretells
in the sketch above.

They will be the same efficient High Speed X Series
looms some mills were able to buy before war came
to demand all the attention and genius and productive
capacity of America's machine-builders.

They will run 20% to 30% faster and produce that
much more cloth every hour than the E Model Series
looms that have done such noble service producing
cloth for our armed forces.

When the Time Comes

We will resume loom-building where we left off.
But we have not stood still.

Our engineers and designers who have been able
to improve guns and other tools of war will go back
to loom-building with a new zest, with increased
skill and with new ideas and methods born of
recent experience.

Now
It's

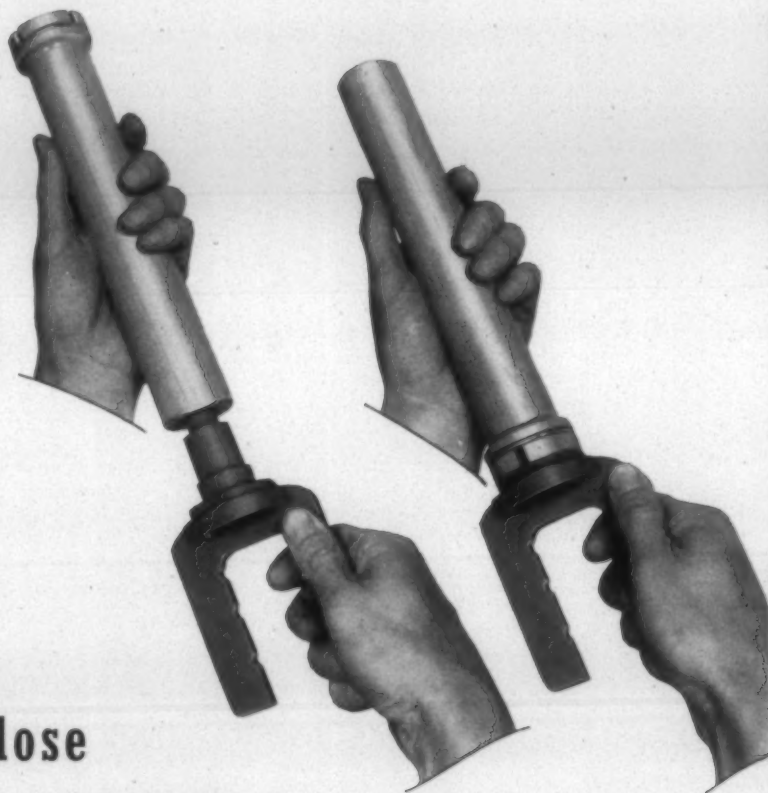
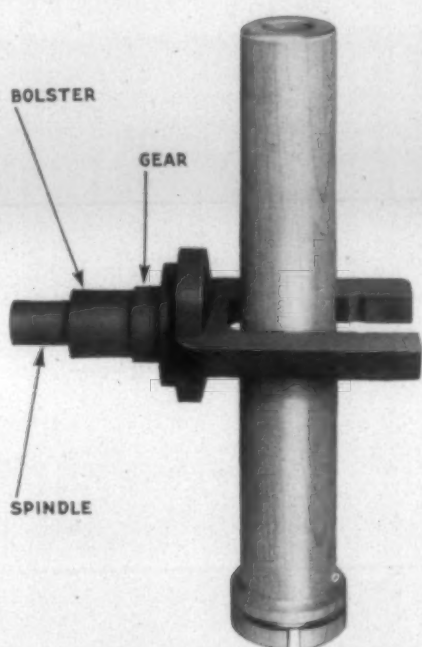
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DRAPER CORPORATION

U S CARD ROOM BOBBINS



GAUGED to Close Tolerances, Inside and Out!

Eliminate bad bobbins—split, cracked, distorted, off-size—and you'll automatically end one frequent cause of uneven roving and drawing, of uneven yarn strength! Go over your card room bobbins and replace all misfits with U S Card Room Bobbins—correct to gauge on every exterior and inside dimension—accurately fitted to your mill spindles, bolsters and gears.

Diameter tolerances for speeders with 6", 7", or 8" traverse are guaranteed not to exceed .0116. On Intermediates and Slubbers 9", 10",

11", and 12" traverse, not to exceed .0156 either side of diameter specified. Equal care goes into selecting, drying and turning stock and applying the oil and lacquer finish, inside as well as out, that guards against distortion and prevents bobbins gathering lint.

Ask our technically trained U S Representatives to help eliminate bothersome operating troubles. The complete line of U S Textile Accessories—Bobbins, Shuttles, Spools, Cones, Rolls, Tubes and other items—provide exactly what it takes.

U S Why No. 5
Watch for More U S
Whys in these Pages



U S BOBBIN & SHUTTLE CO. LAWRENCE, MASS.

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POWER TO ATTACK

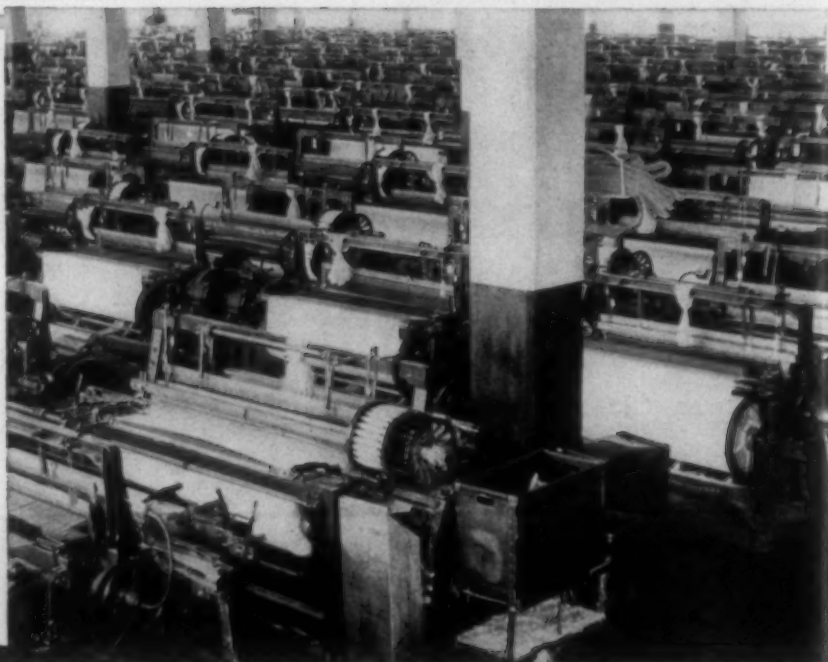
relies on power to *produce*.
For stepped-up production
from TEXTILE equipment
use . . .

Official U. S. Army Signal Corps Photograph

.....SINCLAIR LUBRICANTS...

Lily White Oils provide clean spindle lubrication with low power consumption at highest speeds. No-Drip Lubricants give dependable, non-throw service on top rolls. For bearings, Sinclair Bearing Grease AF has the additional qualities of *water solubility* and color *neutrality*. Sinclair also provides specialized oils for *Knitting Machinery*.

(Write for "The Service Factor"—published periodically and devoted to the solution of lubricating problems.)



SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE SINCLAIR REFINING COMPANY (INC.), 630 FIFTH AVENUE, NEW YORK 20, N. Y.



TEXTILE BULLETIN



December 15, 1943



IT MAY BE THRONE INSURANCE

Cotton growing by water culture methods is being conducted by Dr. Burt Johnson, Goodyear research laboratory's biological and cotton expert, in a greenhouse where growing conditions requiring exact temperature and humidity adjustments can be controlled.

OUT of a series of gravel and water filled tanks may come a revolution in the methods of growing cotton, some sort of prosperity for the cotton growers of America, better cotton than the world has ever seen, and improved tires. The tanks are situated in a greenhouse at Barberton, a suburb of Akron, Ohio, and are part of a fundamental research program being carried out by Goodyear Tire & Rubber Co.

Synthetic rubber tires pick up more frictional heat than carcasses of natural rubber. Because it is claimed that rayon better withstands this increased temperature, rayon has been substituted for cotton cord in many of the new military tires. The cotton industry and the United States Department of Agriculture are seeking either improved varieties of cotton that will equal the heat resistance of rayon cord, or fertilizers which will put the necessary stuff into cotton. In recent years the throne of old King Cotton has been getting wobbly, and this program may well serve to prop up the regal chair and help prevent the Southern monarch's abdication in favor of synthetics.

The program, unique in the annals of American industry, has been under way since 1937. It has already resulted in much new knowledge about cotton, about the physical characteristics of cotton most desirable for the tire industry, and

in the introduction of several new strains of cotton into the American cotton belt. Thus the program, while carried on by the Goodyear company, promises to benefit both the cotton and rubber industries. The Goodyear cotton fiber program is a five-fold one. Its aims are as follows:

First: Co-operation with cotton breeders and state experiment stations to help them find better strains of quality producing cottons.

Second: Setting up cotton variety tests at representative points across the cotton belt to see which varieties produce the most and best cotton under various environments.

Third: Carry through a fundamental series of hydroponics experiments.

Fourth: Translate the results of these hydroponics experiments into field fertilizer practices in the cotton belt.

Fifth: Urge, by example, the growing of better cottons.

Most spectacular result to date has been the introduction into Arizona of a strain of cotton known as the "Wilds 9" but which was previously well known in other cotton-growing states. By the end of 1942, more than 2,000 acres of it had been planted in Arizona and this has been increased during the current year.

This and related strains are becoming so important in Arizona and the Pecos Valley that the Department of Agri-

culture recently issued a publication comparing its spinning qualities with such costly cottons as the American-Egyptian cottons and several of the most prominent varieties grown in Egypt. (An article in this connection was carried in the Oct. 15 issue of TEXTILE BULLETIN.)

Part of the research in this program goes on in the new Goodyear Research Laboratory in Akron, part of it in the Barberton greenhouse already mentioned, the rest on cotton plantations at representative points across the entire cotton belt of America. The researchers are under the direction of Dr. Burt Johnson, a member of the staff of the Goodyear Research Laboratory. Prior to joining Goodyear, Dr. Johnson was on the faculty of the University of Arkansas and the Arkansas Agricultural Experiment Station staff.

It is possible that the experiments at the Barberton greenhouse will result in a revolution in methods of fertilizing cotton. In these studies, Dr. Johnson is seeking to find the correlation between methods of fertilizing and the resulting characteristics of the cotton lint as well as plant yield.

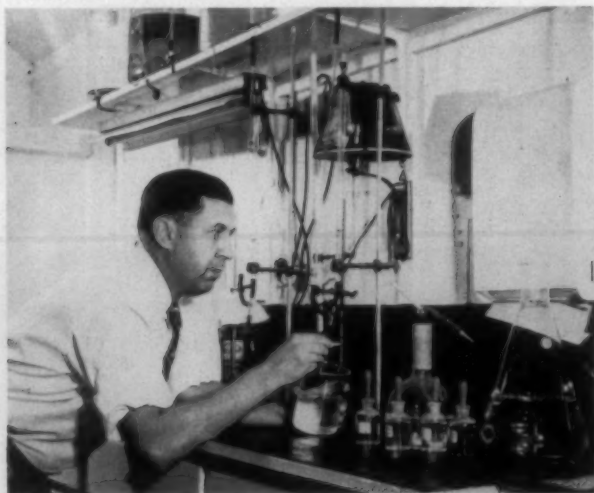
A New Emphasis

Heretofore, much attention has been centered on developing new strains of cotton as a means of attaining desirable characteristics. These fertilizer experiments seek to bring out fully all the best potentialities of the fibers that the cotton experts had bred into the plant.

The gravel and water filled tanks already alluded to are used for experiments in so-called hydroponics or "water culture." These tanks, large, flat, shallow affairs, are in a greenhouse where temperature and humidity more nearly approach those of a Southern cotton field.

A series of pumps at stated intervals flood the tanks with water in which fertilizers, the so-called "plant foods," are dissolved. Then in due time, the fertilizer solution runs off. The gravel merely acts as a means of support for the cotton plants growing in the tanks and furnishes no food to the cotton plants, because the fertilizer solution furnishes the entire mineral nutrition for the plants.

Nitrogen compounds, phosphorus compounds, potassium and other compounds, are added to the water in various proportions and amounts. It is thus possible to operate each tank on a different schedule and to compare the re-



Dr. Burt Johnson, biological and cotton expert member of the Goodyear research laboratory at Akron, Ohio, is seeking to determine the correlation between methods of fertilization and resulting characteristics of cotton for use in improved tire construction.

sults. Also, as the plant develops, the formula of the solution can be changed to fit each particular stage of growth.

Common practice in cotton growing has been to put all fertilizer in the ground in a narrow band near the seed row at the beginning of the season. Dr. Johnson in his greenhouse experiments has found that this may not necessarily be the best way, and he has attempted to translate results of the greenhouse hydroponics tests into practical use in the cotton field.

He has tried fertilizing some plants in this traditional fashion while with others he has tried adding fertilizers at regular intervals throughout the growing season and particularly at the moment that the cotton bolls begin to form. Although Dr. Johnson points out that it is not easy to translate these greenhouse experiments into practical operations on cotton plantations, experiments in this direction have been started.

So far, his results are only preliminary but they seem to indicate that the ideal way to grow cotton may be to put certain fertilizers in the ground at the start of the season, adding others later. The important things, he believes, are to maintain a constant level of mineral nutrition at each stage of the plants' growth and to change the formula as needed, much as a mother changes the feeding formula of her growing child.

In the new technique, the fertilizer is spread thinly over all the space between the two rows of plants. Instead of placing all the fertilizer at once, only one-sixth of the usual amount is used. Another sixth is spread before each succeeding cultivation, so that eventually the plant gets the same amount as would be used if the fertilizer had all been applied at once at the beginning of the season.

Formula Being Changed

Various plans for changing the formula are being tried. Considerably more work must be done before results can be regarded as final. In some of the experiments, a formula was used for the first three applications designed to encourage vigorous growth and high yield. Then at the fourth and later applications, a formula was used so that the plant would have minerals intended to make the longest fiber or the strongest fiber that the plant's genetics would permit. The preliminary results indicate that fiber properties may be influenced by mineral nutrition and that this can be accompanied by increased yield as well.

The public may be surprised at the interest of a rubber company in an agricultural approach to cotton research, but it must be remembered that the so-called rubber tire is actually a combination of rubber and fabric and the so-called cords, the strands of fabric on which the rubber is spread, are fully as important to the life and performance of the tire as the rubber.

The Goodyear company is believed to be the first rubber company to approach the cotton problem at the biological level instead of concentrating most of its studies upon the mechanical characteristics of the cotton already grown.

These researches, as pointed out, are not only of value to the company, but will prove of equal benefit to the entire rubber industry, to the cotton growers of America and through both these industries to the nation at large.

In carrying out the first item in this program, the Goodyear Research Laboratory has made tests of hundreds of samples of cotton for cotton breeders. These tests, carried

(Continued on Page 62)

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The Cotton Council's Plastics Program

A WELL-ROUNDED plastics research program is currently being developed by the National Cotton Council's research division, with three of its four phases already in operation and the fourth to be inaugurated soon. The entire program is designed to assemble factual information on the use of cotton in plastics, as well as to develop possible improvements in plastic products through use of cotton fabrics created especially for the purpose.

Use of cotton in plastics has been given tremendous impetus by the war, with the result that research aimed at providing the best fabric for a specific product has been unable to keep pace with the expansion of the industry. Findings of the council in all of its studies will be made available to the cotton industry as well as to manufacturers of plastics.

The first phase of the council's program involves a study of the influence of fabric structure on the properties of a plastic laminate. This work is being done in conjunction with the Formica Insulation Co. of Cincinnati, one of the larger manufacturers of plastics used in electrical insulation and structural elements. In this phase of the program, the council is spinning yarns and preparing special fabrics, with the Formica Co. doing the impregnating, laminating and testing of the finished products. The spinning work is being done in laboratories at the University of Texas, which are at the disposal of the council. A quantity of sample

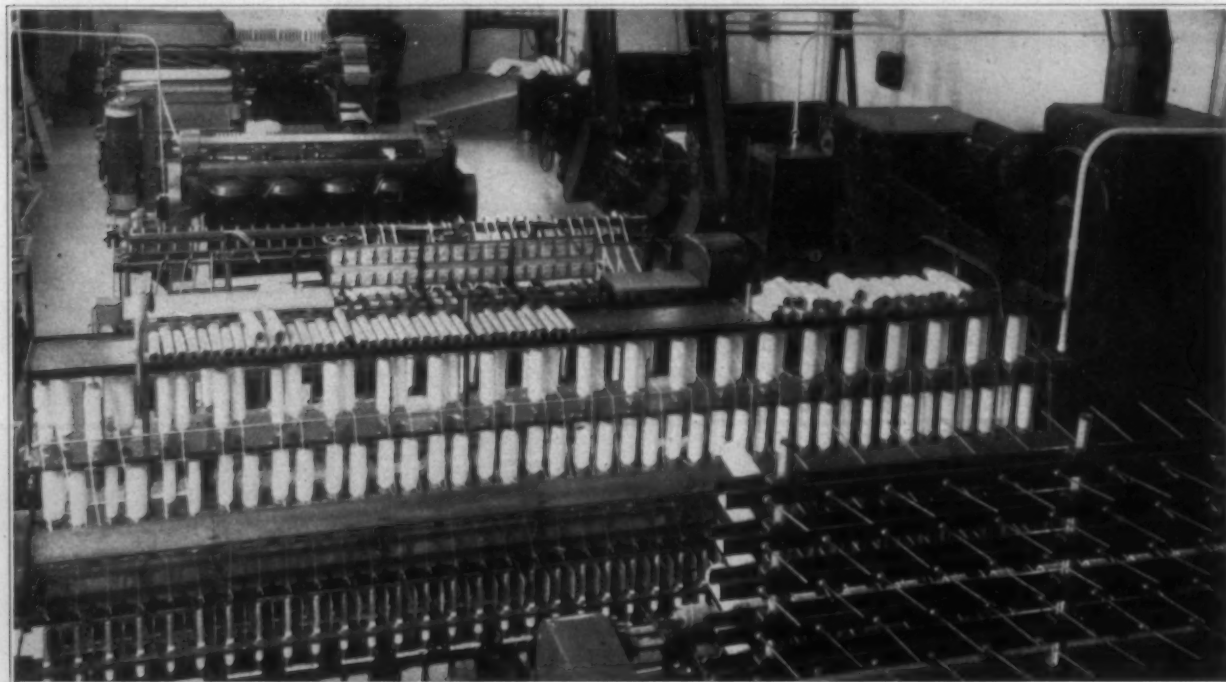
fabrics already has been delivered to the Formica Co. by the council.

A second part of the program includes a study of the relationships of unspun cotton fiber in plastic laminates. This work is being done in co-operation with a large manufacturer of industrial plastics of this type. The use of unspun cotton, rather than fabric, in plastics opens up a new field for cotton, and one which may have tremendous possibilities. Ground-work for this study has been laid and experimental work now is being started in the laboratory at Austin.

Also under way is a study of the application of high polymers (plastics) to cotton fiber. This work will supplement research work being done by large manufacturers of plastics who are at present studying applications to fabric, but not to fiber. Chemicals to be used in the study have been supplied the council's research division by several manufacturers, and methods of application are now being developed. Tests for the properties of materials so treated will be made later. Properties of plastics being sought specifically in the study include resistance to burning, mildew, water-repellency, and others.

The fourth phase of the program, which is to be started soon, is a study of the relationships of pre-treatment of fabrics to the electrical properties of laminates. This work

(Continued on Page 56)



Part of the laboratory facilities of the University of Texas, Austin, which are at the full disposal of the National Cotton Council's research division in connection with its various studies, are shown here. At the far end of the room is a Cen-trif opener from which cotton is piped to a one-process picker. From there, cotton is carried successively to the card, drawing frame, super draft roving frame, long draft spinning frame and twister. Other facilities include a winder, auxiliary drawing frame, model wool card, complete fiber, yarn and fabric testing sections, as well as extensive chemical laboratories.

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"... we are very well pleased with the performance of this equipment ... we have found definite savings as well as more uniform work." *

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"... they have paid for themselves many times over ... we could not get along without them." *

* Names on request.

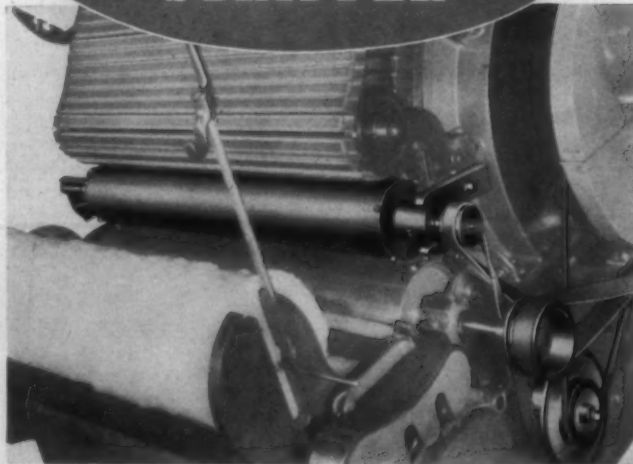
The satisfaction expressed in these statements from mill superintendents is proof of the efficiency and proven performance of the Saco-Lowell Continuous Card Stripper. Its many practical and important advantages may be summarized as follows:

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3. Improvement in Quality of Yarn
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Amioca

-A NEW INDUSTRIAL STARCH

THIS is the story of an industrial research program which, started many years ago by a foreign missionary's curiosity, has been carried through agricultural and laboratory phases to the point where a commercial crop of a new kind of grain is available. Sufficient quantities have now been processed by American Maize Products Co., and tested by Stein, Hall & Co., Inc., to assure its distribution.

Stein, Hall & Co. has co-operated with American Maize in developing Amioca and evaluating it for various industrial uses, such as textile warp sizing, finishing and printing.

The story of Amioca goes back to 1908, when an American missionary, whose mind was not too preoccupied with heavenly things to ignore earthly matters, found growing in China a new variety of corn and sent samples to the U. S. Department of Agriculture. The characteristics of this corn which distinguished it from the ordinary variety was that the surface of the cut kernels looked like hard wax. So it was natural for the name "waxy maize" to originate from this waxy appearance, although the kernels do not contain any wax. Present preference is to call this grain glutinous corn, deriving the name from the sticky or glue-like character of the cooked or pasted starch.

The corn which the missionary found was not well developed. The ears were puny and the yields per acre were poor. The U. S. Department of Agriculture's experimental station at Iowa State College, Ames, became interested, and in conjunction with Iowa State College began developing hybrid having the pertinent characteristics of glutinous corn. These experiments covered a period of many years. Amer-

essed commercially by American Maize Products Co. Plant operations presented no great difficulties. Although starch yields were not good, the hybridizing experiments were successful, and actual yields per acre were high enough to make glutinous corn a commercial crop. At the same time sufficient Amioca was produced to have it tested for industrial purposes.

Stein, Hall chemists have found that Amioca differs from ordinary corn starch in several respects, particularly in the character of the gels formed when heated with water. Compared with the brittle character of ordinary corn starch gels,

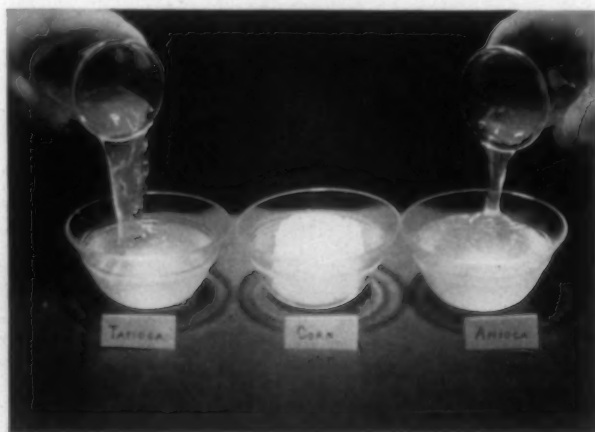


Illustration of the non-gelling character of tapioca and Amioca starches as compared with corn starch. The samples were cooked in 15 parts of water over a boiling water bath, and were then allowed to cool to room temperature.

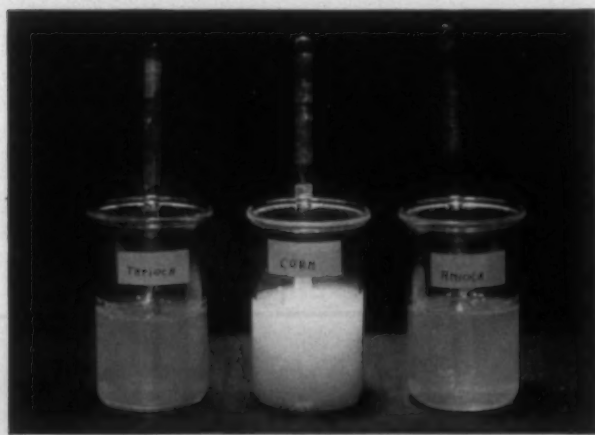


Illustration of differences in clarity between tapioca, corn and Amioca starches. These samples were also cooked in 15 parts of water over a boiling water bath and allowed to cool to room temperature.

ican Maize Products Co. gave its financial and industrial assistance during the development of these goods.

In 1942 a small quantity of seed having yields comparable with the best hybrid corns was available, and a small acreage of glutinous corn was planted. The crop was proc-

Amioca gels are long and gummy, remain in a fluid condition and do not tend to set back to a paste like ordinary corn starch gels, and are substantially clear in appearance as compared with the opaqueness of regular corn starch gels.

In these respects Amioca resembles tapioca flour more nearly than does corn starch. It is chiefly because of these properties that Amioca has been found successful for many purposes which tapioca has served.

Other Properties

Stein, Hall has also found that the resemblance of Amioca to tapioca flour is carried through in enzyme conversions as well as in the formation of dextrans. The amount of liquefying enzymes necessary to convert Amioca to a given viscosity is less than that required with corn starch and more nearly like the amount required with tapioca flour. In the manufacture of dextrans, the amount of acid required to produce dextrans of different types approximates more nearly the amount required with tapioca flour than with corn starch.

In clarity, transparency and fast tack, dextrans and gums manufactured from Amioca resemble tapioca flour and can

(Continued on Page 58)

Large-Scale Production of Soybean Fiber

Under Way at New Plant

A NEW textile fiber made from soybeans, which was a \$400-a-pound laboratory curiosity five years ago, is now being produced on a commercial basis to be marketed at prices competitive with wool, according to a recent announcement made at Cincinnati, Ohio, by H. R. Drackett, president of the Drackett Co. This new product is elastic, resilient and moisture absorbent and is also the first non-animal protein fiber. It is now being used experimentally in such products as hats, underwear, blankets and other textiles. It can be blended with both wool and cotton.

This soybean fiber was first developed in 1938 by the Ford Motor Co. Just recently that organization's soybean processes, equipment and personnel were acquired by the Drackett Co. which for several years past has carried on its own extensive scientific research on soybeans.

Now Commercially Practicable

Mr. Drackett pointed out that scientific study of soybean fiber and development and improvement of the manufacturing processes have converted this erstwhile laboratory curiosity into a commercially practicable new fiber which has a wide variety of potential uses in the textile field. It is as warm as wool and its cost will be low enough to permit it to compete with various other fibers. It has never before been produced on a commercial basis.

Coincident with the opening of the new plant Mr. Drackett and Robert Boyer, the company's director of research, disclosed for the first time just how this fiber is produced from the versatile soybean:

"Although it has required several years of intensive research and laboratory experiment to develop this process it is relatively simple in actual operation," they explained. "From the soybean we first extract soybean oil through a method we developed several years ago. After this is done there remains soybean meal, which we sell in large quantities for livestock feed. Roughly half of this meal is protein. To manufacture our new fiber we remove the required amounts of protein from the meal. This gives us a powder-like product. Through a special process this is liquefied and converted into a mass with a consistency resembling that of molasses. This liquid is then forced under pressure through very fine platinum spinnerettes from which it emerges as hundreds of thin filaments. These filaments are then given a number of carefully controlled chemical treatments and baths, during which they are stretched and hardened. Finally the fibers are dried and then cut into any desired lengths.

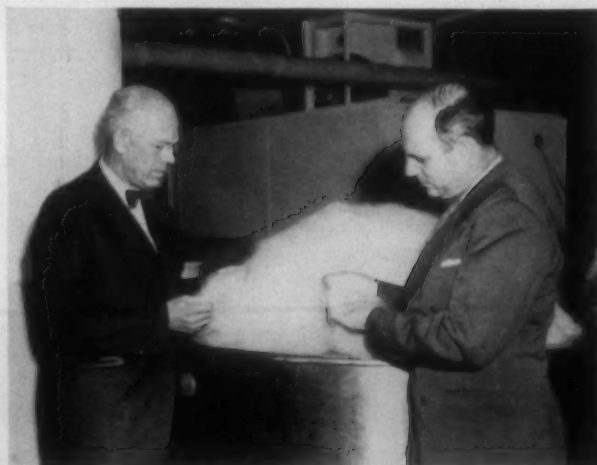
"The end product is a fiber which resembles wool in ap-

pearance. In accomplishing this we have effected a variety of chemical changes. By altering and rearranging the molecules we can secure a product which has a variety of characteristics."

Drackett Was a Pioneer

The Drackett Co. has pioneered in soybean developments. It first became interested in soybeans about 1936 when, after a long study of this agricultural product, Mr. Drackett believed it had the promise which attended the development of hydrocarbons several decades ago. He felt that once the oil and protein had been taken from the soybean it would be possible to go on to many other products. His laboratory technologists developed their own method for processing the oil from soybeans through the use of a solvent extraction process instead of crushing or squeezing it out of the bean.

The company's technologists have made many products experimentally from soybeans, including plastics, wallboard and paints. Currently the company produces about 70,000 tons of soybean meal annually, and approximately 30 million pounds of soybean oil, which is currently distributed under government allocations.



H. R. Drackett, president of the Drackett Co., Cincinnati, and Robert Boyer, research director of the company, are shown above inspecting the first batch of a new fiber made from soybeans at the company's plant, the first such plant to turn out this fiber on a commercial basis. This new fiber is actually a new raw material which may be blended with either cotton or wool or may be woven or spun into a wide variety of textiles and fabrics. Its production will be limited until such time as wartime demands decrease and release equipment and machinery needed to produce it in quantities.

Military Fabrics Possessing Potential Value For Civilian Uses

Naphthol Dyeing of Warp Mercerized Woven Cotton Goods

Part Fourteen of a Series on Wartime Dyeing—By Allison Fitzgerald

GOODS made of various warp mercerized yarns can be dyed satisfactorily by the pad-jig method without drying after naphtholation if substantive naphthols are used; otherwise, it is more practical to dye the goods on continuous operations when non-substantive naphthols are used. The dyeing of naphthols by the pad-jig method gives more uniform results and better penetration than jiggling the goods in the naphtholate bath and then developing the shade on the jig.

The naphthol pad-jig method is as follows: make up reserve naphtholate tank, 150 gallons, using required naphthol for strength of shade run—oz./gal. Naphthol ASSW; oz./gal. Naphthol ASBR; oz./gal. Naphthol ASTR.

Paste up with alcohol and dissolve with one-third to one-half as much caustic soda as naphthol used. Heat naphthol liquor to 160-180° F. after it is made to required volume. Pad at 160° F. to 180° F., according to cloth construction, with a speed of 70 to 100 yards per minute. Batch on roll and enter on jig. On medium to heavy shades of two to five ounces per gallon of substantive naphthols, give a salt wash of two ends on jig prior to starting up developing bath.

The salt wash is as follows: two ends cold bath at 70-80° F.; 25 pounds common salt per 60 gallons. The developing bath: two and one-half to six oz./gal. diazotized base solution, or six to 18 oz./gal. fast color salt solution with acetic or formic acid. Adjust bath to pH of 4.5 to 5.0 for uniform

development of shade. Add ten to 20 pounds of common salt, run four ends, sample on fourth for shade; if correct, finish up; if weak, enter additional fast color salt solution to jig, running two additional ends, drop and give two ends cold wash, then give four ends hot soaping off at 200° F., using two pounds of soap and one pound of soda ash or sodium pyrophosphate; drop, give two ends at 180° F. and one end through cold rinse, batch on roll ready for drying on cans, framing and finishing.

Hot Flue Drying Method

On piece goods dyed with non-substantive naphthols, when dried on metal cans, the naphthols tend to migrate, causing a two-sided effect when the shape is developed. Due to this migration of non-substantive naphtholated goods on metal dry cans, the hot flue drying method was worked out and has proven very satisfactory for economical and level dyeing results.

On lightweight goods, this continuous procedure gives good results: two to four oz./gal. Naphthol AS, $3\frac{1}{2}$ to seven oz./gal. common salt; pad at 160-170° F., 70 to 100 yards per minute; run over sky rods 20 to 30 seconds, then into hot flue dryer; return to skying rolls for sufficient cooling before hot goods are entered in developing operation, which must be kept cold.

For lightweight constructions, a ten to 15-gallon developing box with squeeze roll is usually sufficient for full development if dried naphtholated goods are cooled satisfactorily before starting the developing bath.

The development bath is made up as follows: three to seven oz./gal. diazotized fast color base solution; seven and one-half to 20 oz./gal. fast color salt solution; one ounce Stabilon stabilizing agent for developing bath); and two ounces acetic acid (56 per cent). A temperature of 50-60° F. and a pH of 4 to 5 should be kept according to the fast color base solution being used. Once through this development bath is usually sufficient, but it must be kept at proper acidity and cold temperature or full development of shade will not take place.

The goods leaving development bath are given two cold washes to remove excess developinug and acid solution before entering soaping off bath, then batched ready for rope soaping, finishing, drying and framing as on vat dyed goods.

On medium to heavyweight goods, the strength of the naphtholate bath is usually stepped up considerably and the



A hot flue dryer, very practical in dyeing piece goods with non-substantive naphthols. (Photo courtesy Andrews & Goodrich, Inc.)

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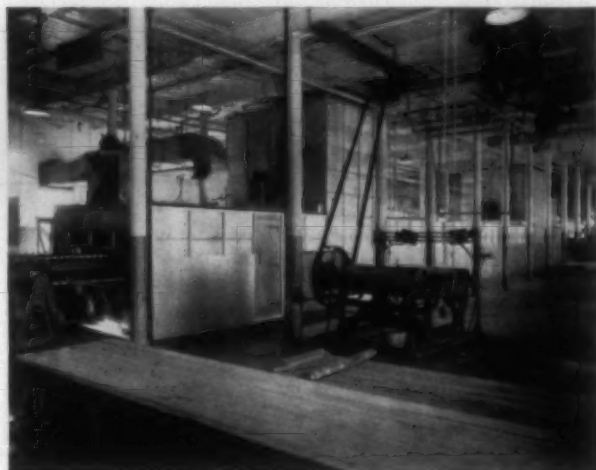
APARTADO 533

Mexico, D. F.

It's Tops in Tape

padding speed is reduced to 50 to 70 yards per minute, with temperature raised to 180° F. for better penetration.

The development bath is changed from a shallow bath holding ten to 15 gallons to a two or four-roll development bath with a larger development bath to insure complete development of shade; otherwise, the selvages will be light and there will be a two-sided effect on goods.



A tenter dryer (covered frame) made by Andrews & Goodrich, Inc., and used for heavyweight goods.

Finishing up of medium weight goods can be carried out on rope soaper and on the same constructions of the heavyweight goods, and it has been found best to soap off on jig so as to secure finished naphthol dyed goods free from crocking as possible.

The naphthol dyed goods, after a thorough soaping off operation, are given hot and cold washes ready for drying on cans and framing and ready for special finish to be applied on quetsch before final drying and framing to width.

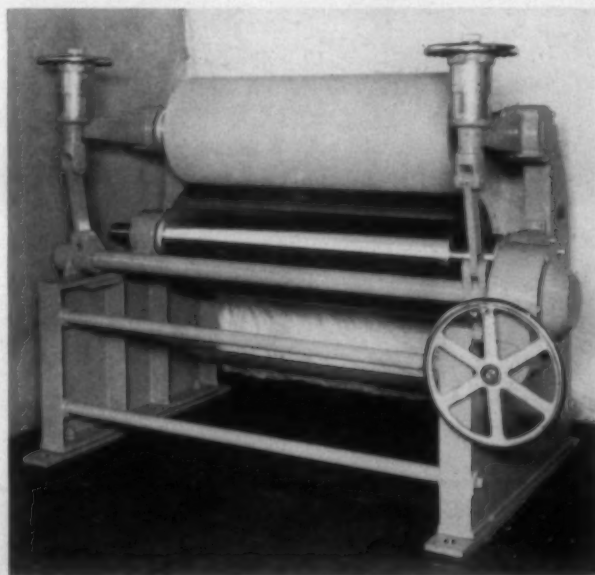
The finishes are applied according to weight, construction and special purpose of fabric; several of the most common types used are reserve mix of 150 gallons: five pounds gelatine, 15 pounds gum trag, and six pounds sulfonated oil. Pad on quetsch and dry on cans or loop dryer. Frame to desired width on 60-foot frame. This gives a natural semi-crisp hand, desirable on lighter weight dress fabrics.

For the medium to heavyweight goods to be made up into the middle price bracket of wind-breaker jackets, hunting and fishing tops as well as sports clothes, fabrics may be finished up by several methods of applying waterproofing compounds as self finishes and in combination with some of the shrinkage control resins such as urea formaldehyde. Some finishing plants may be sufficiently equipped with sanforizing units and can sanforize the water repellent finished fabric instead of giving a special resin finish for shrinkage control. A self water repellent finish (150-gallon reserve mix) is as follows: 30 to 90 pounds water repellent compound, one to three pounds acetic acid and two to four ounces fungacidal agent (odorless). Pad at 120 to 140° F., dry on cans and frame to width, ready for inspection. Check the water repellency; if too stiff, add one to two pounds sulfonated fatty alcohol; this will help lubricate the fabric without reducing the water repellency to a noticeable degree. A combined resin and water repellent finish (150-gallon reserve mix) is 40 to 80 pounds water repellent compound: enter cold into 50 gallons of water, heat up to

160° F. to disperse satisfactorily, and then add cold water up to 100 gallons so as to cool to 100-120° F.; add in with compound two to four ounces odorless fungacidal agent. Use 40 pounds urea formaldehyde (powder form) or 80 pounds urea formaldehyde (paste form). Dissolve thoroughly in eight gallons of water at 140° F., then cool to 100-110° F. by adding ten gallons of cold water. Enter into mix tank ready for plasticizing compound (lubricant) so resin can give a full and soft hand on finished goods. Five to 20 pounds plasticizing agent is dissolved and added direct to mix; accelerators or catalysts (agents to start and complete the curing or proper ageing of the urea formaldehyde resin on fabric) are added five to 15 per cent on weight of urea formaldehyde resin used.

Temperatures and Speeds

Do not add this until the mix is ready to be applied on padder, then dissolve in hot water and enter directly into mix tank; made up to volume at temperature of 110-120° F. By keeping the solution in mix tank at 120° F., this will insure a temperature between 100-110° F. in the padder for applying to cloth. Pad at 70 to 140 yards per minute, run into boxes and batch if a dryer is not convenient for immediate drying. The goods must be dried and cured at 275-300° F. either on a 90-foot covered frame or suitable loop dryer. On a 90-foot covered frame the goods will require a speed of around 40 yards per minute to secure satisfactory curing, though on lightweight constructions this may be speeded up to 50 to 70 yards per minute. If only the shrinkage control finish is desired on the goods under process, just omit the water repellent compound and prepare the resin shrinkage control compound as outlined and this will give a satisfactory finish.



A two-roll dye padder, or mangle, of the microset type, made by Morrison Machine Co.

Makers of water repellent compounds are: Hypel, Burkart-Schier; Ramoset, General Dyestuff; Aridex, DuPont; Drax, S. C. Johnson & Sons, Inc.; Migosol, Ciba; Impreg-nol, Warwick; and Aquapel, Aqua Sec.

Makers of urea formaldehyde, plasticizers and accelerators are: Rohm & Haas Co., Calco Chemical Co. and Quaker Chemical Products.

Taking the "Twists"

out of 38 Twister Drives

When a well-known textile mill decided to remodel their twister drives, they had many a "twist" to eliminate. Oiling was required weekly. 50 h.p. motors were overloaded to 72 h.p. Machines had to be "warmed up" gradually, because of extreme starting torque.

The transmission specialists who tackled the job solved most of the problems with Fafnir Double Ball Bearing Hanger Boxes. Motor loads dropped 33% - to 48 h.p. The whole room started "on the whistle", without delays. Production increased 5%. Greasing every 6 months replaced the weekly oiling. The new drives paid for themselves in one year.

LINESHAFTS THAT RACE

Unusual as they may sound, these are typical of the benefits Fafnir Transmission Units bring, when they replace inefficient plain-bearing supports on lineshafts of machine drives. But add to this story of savings the facts from another Fafnir-ized department in the same mill, a spinning room. Here high-speed machines required lineshaft speeds of 1250 r.p.m. The Fafnir Hanger Boxes took this pace in their stride, and showed another saving. For sticking plain bearings and oil leaking onto pulleys and belts previously caused belt slippage, shortened belt life. With Fafnirs, bearings ran free, oil could not leak; result - the slippage disappeared, and costly belts stay on the job far longer.

Power losses? High maintenance cost? Frequent bearing replacement? . . . no matter which is your problem, your Fafnir distributor will help you solve it, from the complete line of Fafnir Transmission Units. The Fafnir Bearing Company, New Britain, Connecticut. Branch Offices: Atlanta, Birmingham, Boston, Charlotte, Dallas.



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Ball Bearings



Employees and the 'E'



THE third of December, 1943, was a big day for employees at the seven plants of Springs Cotton Mills in South Carolina, and workers played the leading roles during six Army-Navy "E" award presentation programs held simultaneously at Lancaster, Chester, Fort Mill and Kershaw.

The principal ceremony took place at Lancaster before some 10,000 persons, including military personnel as well as many visitors connected with the textile industry. Maj.-Gen. Clifford L. Corbin, assistant Army Quartermaster General, made the presentation on a rostrum near the Lancaster plant. Col. Elliott White Springs, president of the company, accepted the award.

Governor Olin D. Johnston, master of ceremonies, introduced General Corbin, who complimented the management and employees on this meritorious and distinguished award, won by only three per cent of war plants.

Colonel Springs said that it was an honor to represent the men and women of the seven mills. "We are proud of our record, also proud of the more than 2,000 employees in the armed services, and proud that each of the seven plants has been awarded the Army-Navy 'E' and U. S. Treasury Minute Man flag," he added. "But," he continued, "we would not be proud if we could not have changed from the largest print cloth mill in the world to a plant making materials to be used by our boys all over the world. With pride is mingled humility, because any achievement we make on the

production front can never match the spirit of sacrifice and devotion of those uniformed in our materials."

Capt. R. C. Needham, representing the Navy, read the citation and presented the "E" lapel pins. Acceptance of the "E" pennant at each mill was by a group of three and in some instances four workers. There were double events at Fort Mill and at Kershaw, where Minute Man flags also were presented.

The main program at Lancaster was transmitted by wire to each of the other plants, where acceptance ceremonies were conducted by employee committees made up of workers with lengthy service records. Picture (1) above is a scene showing employees of the two Fort Mill plants who participated in the program there. Other pictures show employee groups at the following mills: (2) Kershaw plant; (3) Eureka plant at Chester; (4) Gayle plant at Chester; (5) Lancaster plant; and (6) Springstein plant at Chester.

Other Recent Awards

Colorful ceremonies Dec. 1 marked the presentation of the Army-Navy pennant to Bath (S. C.) Mills. Brig.-Gen. Roland Walsh, commandant of the Philadelphia Quartermaster Depot, made the award, stating that he was presenting to "you, men and women of Bath Mills, the Army-Navy

(Continued on Page 52)

WATER
POWER
PLANTS
800,000
H. P.

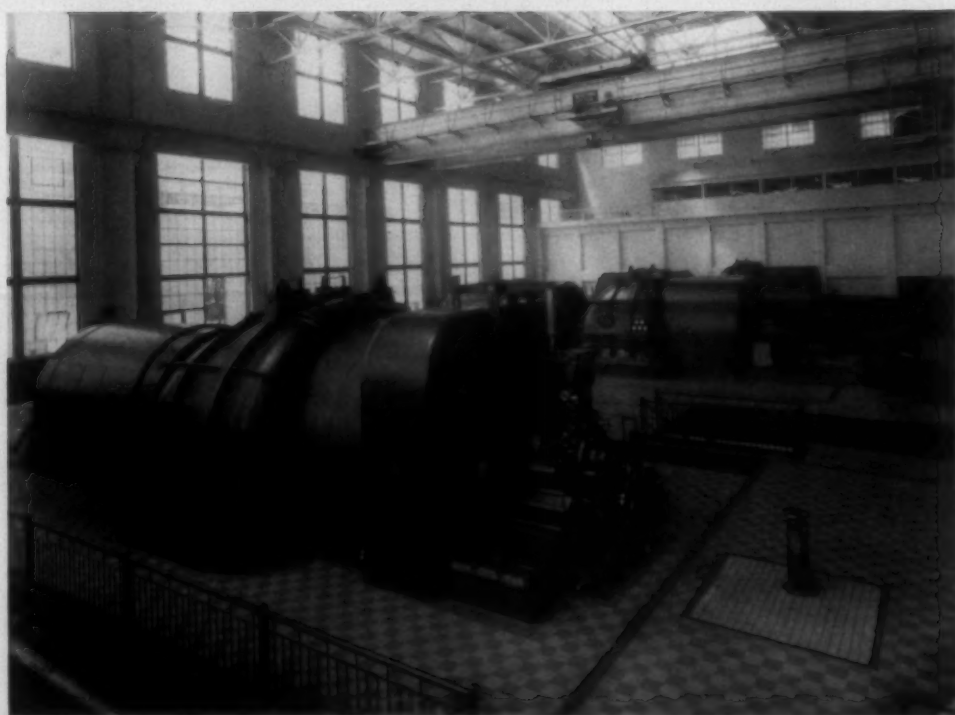


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North Carolina State College, Raleigh

PART TWENTY-FOUR

Warp pique designs, explained in this installment of Dr. Nelson's series, will be followed in the next issue by fancy piques. When the author has finished his discussions of piques, he will take up the subject of double fabric designs.

FABRICS made with warp pique weaves are also called Bedford cords. They are rib fabrics having the ribs, or "wales," as they are frequently called, running lengthwise in the fabric. The term "pique" is often applied to both regular and warp pique fabrics, so that when this word is used alone in specifying a fabric it should be understood which of the two fabrics is meant. Well-constructed warp pique fabrics are very serviceable and are put to a variety of uses such as dress goods, blouses, trimmings, trouserings, etc. The plain weave is generally used in these designs and fabrics.

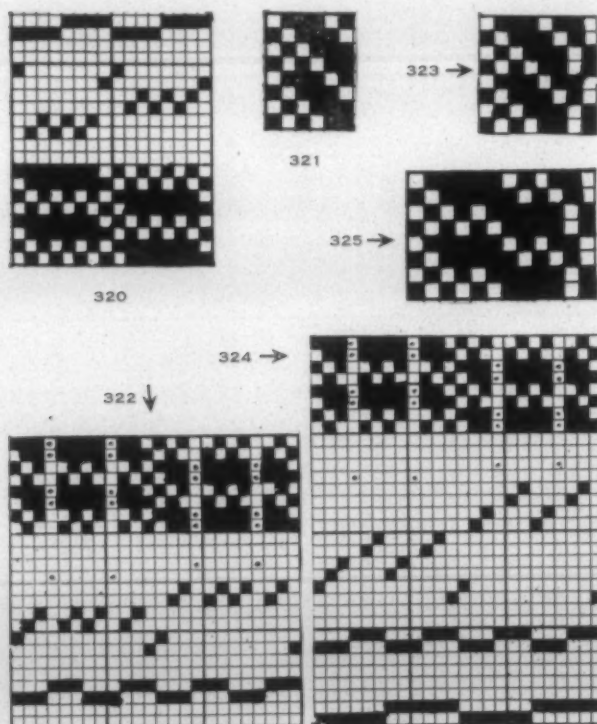


Fig. 320 illustrates a design for warp pique, with drawing-in draft and reed plan. Fig. 321 illustrates the chain plan. In the design it will be noticed that threads one, eight, nine and 16 are weaving plain throughout. These threads form the division of the wales in the fabric. The threads one to eight form the first wale, and the threads nine to 16 form the second wale in the fabric. In the picks

it will be noticed that the first and second picks weave plain with the threads in the first wale, then pass to the back of the second wale. The third and fourth picks pass to the back of the first wale, then weave plain with the threads in the second wale. It will also be noticed that one-half of the filling is at the back of the fabric so that for a well-constructed warp pique there must be a sufficient number of picks inserted to compensate for those which pass to the back of the fabric. This point must be kept in mind when constructing these fabrics. In weaving, there must be sufficient tension on the loom beam to keep the yarn tight because of the difference in take-up of the threads. Unless this is done, the filling will have a tendency to kink on the face of the fabric. Two ribs or wales are required for a repeat of pattern.

Cords or wadding threads are often used in these fabrics to add weight and to give a more embossed effect to the rib in the fabric. One, two, or more cords are frequently added to each rib. The cord or wadding thread is woven under the fabric and is not seen on the face.

Fig. 322 illustrates a design with drawing-in draft and reed plan, with two wadding threads under each rib. Fig. 323 illustrates the chain plan. The wadding threads are drawn through separate harness shafts, and when the face threads are weaving plain the wadding threads are not raised, but when the filling is passing under the rib the wadding threads are raised and this holds them in position under the fabric. In reeding these fabrics the two threads that weave plain throughout the fabric and which separate the ribs should not be put in the same dent. They should always be reeded one thread in one dent and the other thread in the next dent. When wadding threads are used, two beams are required, owing to the difference in the take-up of the threads.

Four Shafts in Finer Grades

These drawing-in drafts have been made on the least number of harness shafts possible to weave the fabric. However, on the finer grades of these fabrics the best practical method is to use four harness shafts for each wale. When but two harness shafts are used for each wale the ends are somewhat crowded or crammed together and there is a tendency for them to cling to each other and prevent a clear shed from being made which will also cause kinky filling to be made in the fabric. Sometimes, in order to improve the weaving of the fabric, it is advisable to use a different reed. If the reed is too fine then a coarser one can be used. In some cases the drawing-in draft will have to be changed also. Fig. 324 shows how a coarser reed

(Continued on Page 50)

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Southern Textile Assn. Has Successful Convention

APPROXIMATELY 180 textile mill operating executives and others connected with the industry in the Carolinas and Virginia attended a general meeting of the Southern Textile Association at the Charlotte (N. C.) Hotel Dec. 11.

The convention, termed by many present the most enlightening such affair in recent years, resulted in the election as association president of Joe C. Cobb, general superintendent of Startex Mills at Tucapau, S. C. He was elevated from the position of vice-president of the group and succeeds T. C. Pegram, superintendent of Erwin Cotton Mills Co. No. Three at Cooleemee, N. C., as president.

Others named were B. M. Bowen, current chairman of the association's Piedmont division and superintendent of Salisbury (N. C.) Cotton Mill, chairman of the board of governors; M. Weldon Rogers, former board chairman of the group and general superintendent of Jackson Mills at Iva, S. C., vice-president; and Marshall Dilling, formerly secretary and superintendent of A. M. Smyre Mfg. Co., Ranlo, N. C., re-elected executive secretary. Smith Crow, superintendent of Erlanger Mills, Inc., at Lexington, N. C., was re-elected to membership on the board of governors. New members named to the board are W. W. Splawn of Pelzer, S. C., currently chairman of the association's South Carolina division; J. L. James, assistant manager of the Erwin Cotton Mills Co. plant at Cooleemee, N. C.; and Howard Barton, superintendent of the Marshall Field & Co. rayon mill at Spray, N. C. James T. McAden, associate editor of TEXTILE BULLETIN, Charlotte, was re-elected secretary-treasurer by vote of the board of governors.

At a meeting of the associate members division, John C. Turner of Chas. Bond Co., Atlanta, Ga., was re-elected chairman; Falls L. Thomason of New York & New Jersey

Lubricant Co., Charlotte, was re-elected vice-chairman; Claude Iler of Keever Starch Co., Greenville, S. C., was named second vice-chairman; and Junius Smith, business manager of TEXTILE BULLETIN, was re-elected secretary.

Following registration of members, the first session of the convention began with a brief address of the retiring president, T. C. Pegram (see next page).

Training in textile management and textile research is the chief objective of the textile school at North Carolina State College, said Dean M. E. Campbell, in the next talk. Declaring that the function of the school was being appraised now, Dean Campbell pointed out that the "purpose should be to provide sufficient training in technique to enable the student to understand the principles of the manufacturing processes and their possibilities and limitations without spending a lot of valuable time in polishing up a technique that would only fit him to become a good machine operative."

Employee Training Discussed

Carl R. Harris, vice-president of the Erwin Cotton Mills Co. and a former president of the Southern Textile Association, was unable to attend the meeting because of illness. His speech was read by Edwin Holt of Erwin Mills.

"I know of no better approach to the problem," said Mr. Harris, "than to thoroughly familiarize yourself with the work being done by the Training Within Industry division of the War Manpower Commission."

The program mentioned by Mr. Harris was the topic of the final morning session speaker, Grover S. Tome, a representative of the War Manpower Commission from Raleigh, N. C. Mr. Tome briefly explained and demonstrated the work of his Training Within Industry division.

The election of officers was held and then members gathered for the luncheon session, at which Dr. George D. Heaton, pastor of the Myers Park Baptist Church at Charlotte, spoke on "Principles of Good Supervision."

Dr. Heaton remarked on the excellent record which has been made by the men on the production front, but declared that they face many problems. The labor problem was described as a serious one which may be solved, and he said that the shift from war to peace production will challenge every practice of labor and management.

Dr. Heaton was introduced by W. M. McLaurine, secretary-treasurer of the American Cotton Manufacturers Association.

Songs by the Gay Nineties Quartet preceded the address of Dr. Heaton, and awards of war bonds and stamps and turkeys were made following it to persons who held lucky numbers. Entertainment and prizes were furnished by the associate members division of the association, to which much credit for the convention's success was given. John C. Turner supervised the prize drawings.

President Cobb announced following the meeting that the association board of governors would meet at Spartanburg, S. C., Jan. 15 to discuss future plans for the group.



New and old officials of the Southern Textile Association were pictured at the group's recent meeting. Front row, left to right: Joe C. Cobb, new president; T. C. Pegram, retiring president; and Marshall Dilling, the re-elected executive secretary. Back row: B. M. Bowen, chairman of the association's board of governors; M. Weldon Rogers, past board chairman and now vice-president; James T. McAden, the re-elected secretary-treasurer; and John C. Turner, chairman of the associate members division, also re-elected.



Pictured at the recent Southern Textile Association meeting, left to right, Claude Iler, newly elected second vice-chairman of the associate members division; two of the four ladies present, Mrs. M. T. Poovey, wife of the superintendent of Edinburgh Cotton Mills, and Mrs. R. L. Smith, wife of the Victor Ring Traveler Co. representative; two of the speakers, Grover S. Tome and Dr. George Heaton, surrounding W. M. McLaurine, who introduced Dr. Heaton; Falls L. Thomason, vice-chairman of the associate members division, and Douglas Tompkins, assistant manager of Mayfair Cotton Mills.



Shown at dinner, T. D. Flack, superintendent of Wade Mfg. Co., with Henry Constable of DuPont, and Emmett Steger of Sherwin-Williams Co.; E. L. Cantrell of Springs Cotton Mills, Cantey Alexander of Corn Products Refining Co., and H. P. Walker of Springs Cotton Mills; J. M. Caughman, superintendent of Spartan Mills.



The new association president, Joe Cobb; J. D. Cox of Slip-Not Belting Co. and T. D. Ingram of Cannon Mills Co.; T. C. Pegram, the retiring president, with Frank Osteen, John Humphries and Bob Walker.

ADDRESS OF PRESIDENT T. C. PEGRAM

As you know, the board of governors of our association has complied with the request of the Government to dispense with our meetings for the duration. However, the ban has now been lifted and so we have called this meeting to transact the business that is usually handled at our annual meeting.

I have regretted the fact that in order to carry out the wishes of our Government it has been necessary to call off the sectional meetings which are most helpful to us. I sincerely hope that the time is not far distant when the sectional meetings can be held again.

After the war, competition will be greater than ever before and business cannot afford to wait for those of us who do not have foresight enough to do away with our present-day methods of operating mills and apply the modern yard stick to everything we say or do.

We of America today are manufacturing practically two-thirds of the world's supply of cotton goods, and if we can develop the determination that our forefathers had at the end of the Civil War we can continue for many years to manufacture the majority of the cotton goods the world uses. Our forefathers imagined that by building cotton mills they would be able to make money for themselves

and give employment to their neighbors. On the other hand, they had the courage, not just ordinary courage, but the kind of courage that will forget time honored methods of doing things and try new ways with the determination to make them succeed. There is always a demand for something new, and with the experience gained during this war, we should be able to furnish plenty of variety in cotton goods in the year to come.

Since our last meeting, your board of governors has employed James T. McAden as secretary-treasurer, and he has been most efficient since assuming his duties. I am sure that as soon as the association can begin to have its sectional meetings he will be most helpful in putting on good programs. I wish also to express my appreciation to Mr. David Clark and Mr. Marshall Dilling for their interest and assistance during my term of office. We are also greatly indebted to our associate members for their efforts in making our meetings more enjoyable.

It has been both a privilege and a pleasure to serve as president of such an outstanding organization as the Southern Textile Association. I greatly appreciate the honor you have conferred upon me, and the splendid co-operation I have received.

MILL NEWS

ELLENBORO, N. C.—Officials of Queen Anne Mills have announced that additions are being made to the plant. Operated by the Neisler Mills organization of Kings Mountain, N. C., the plant will be used in the manufacture of rayon fabrics.

ANDERSON, S. C.—A fire discovered late in the afternoon of Nov. 27 caused an estimated damage of \$50,000 at Anderson Weavers, Inc. The flames started at an electric switchboard and spread beyond control before fire fighting apparatus could be brought into use. The plant, now almost completely destroyed, is three miles south of Anderson.

SPARTANBURG, S. C.—Work has been started on a new cafeteria for employees of Beaumont Mfg. Co. The structure will have two stories, with a basement, offices, preparing rooms and refrigerators, and the main floor being given over to the cafeteria proper. A ramp from the mill to the building will provide an entrance for workers. Eating schedules will be worked out for each shift, so that everyone in the mill will have an opportunity to secure a hot meal during a work period. A trained dietitian will be in charge.

LAFRANCE, S. C.—A post-war conference for Pendleton Mfg. Co. was held recently. Directors of the company in attendance included Col. James H. Hayes, board chairman; Bernard Davis, president; R. E. Nicholson, vice-president and treasurer; Paolino Gerli, secretary of LaFrance Industries; Wm. P. Dunn, Jr., vice-president of the Manufacturing Trust Co., New York; Alvah H. Coombs of New York, James Warnock, Jr., of Philadelphia and John H. Gossling, counsel.

KANNAPOLIS, N. C.—The seventh annual loyalty banquet for Cannon Mills Co. employees was held Dec 15 at the Kannapolis Y. M. C. A., with Dr. William P. Jacobs, executive vice-president of the Cotton Manufacturers Association of South Carolina, as the main speaker. Some 1,000 employees of Cannon plants at Kannapolis, Concord, Salisbury, Rockwell, China Grove and Mount Pleasant in North Carolina, and York, S. C., were present. Eighty-six men and women who have completed a quarter century of service received 25-year pins. Forty-five workers were promoted to the 35-year class, and 13, including A. Luther Brown, vice-president and general manager of the company, became members of the 45-year group.

Textile Men Take Part in Purchasing Agents Meeting

W. Z. Betts of the North Carolina Department of Purchase and Contract was elected president of the Carolinas-Virginia Purchasing Agents Association at its annual meeting held Dec. 3 at Charlotte, N. C.



C. F. Williams of Erwin Cotton Mills Co. is shown, at left, as he presents to J. Y. Pharr of Cannon Mills Co. the W. G. Thomas trophy for meritorious service to the Carolinas-Virginia Purchasing Agents Association. Mr. Thomas is shown at center.

Brown Mason of Dunean Mills, Greenville, S. C., was elected vice-president and J. M. Potter of the North Carolina State Highway and Public Works Department was elected secretary and treasurer. W. G. Terry of Lynchburg, Va., retiring president of the association, was elected a national director.

The convention opened with a business session after which there was an open forum discussion on matters of interest to the purchasing agents led by L. H. Kise of the Charlotte office of the War Production Board. Reports were made by officers and by R. V. Spangler of Charlotte, state director on the national association board. A round-table discussion on the various phases of American production, distribution and supply was led by David Lindsay of Charlotte, director of purchases for Johnston Mills Co.

In the afternoon there were several group meetings with the members divided into those interested in textiles and other divisions of the association. At the general session, which opened at 4:30 o'clock, J. W. Knowlton of Charlotte, economist for the association, presented a paper on "Post-War Economic Geography" after which there was an open forum discussion of this subject.

Mr. Lindsay was awarded the fellowship cup at this session and the new officers were introduced.

The convention closed at a banquet session with Roseman P. Gustin of the General Electric Co. as speaker. Mr. Gustin talked on "Planning the World We Want." The Thomas award for service to the association was presented to Jones Pharr of Cannon Mills Co., Kannapolis, N. C.



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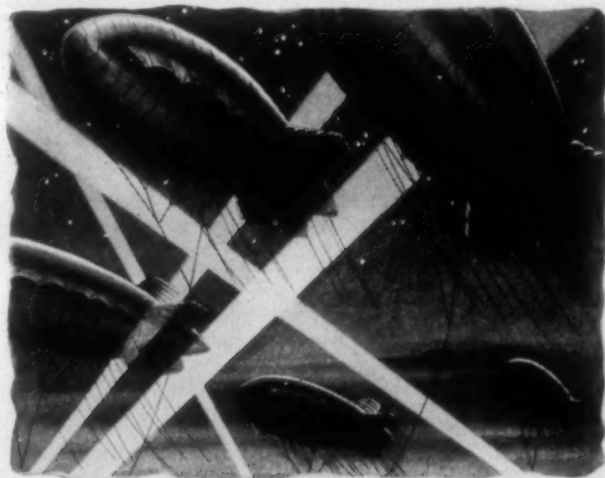
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PERSONAL NEWS

T. C. Flanagan, formerly of Whitehall, Ga., is now superintendent of Manetta Mills, Monroe, N. C.

Joe L. Jennings, superintendent of the West Point Mfg. Co. plant at Fairfax, Ala., has been elected general chairman of the Chattahoochee Valley chapter of the American Red Cross.

August W. Kops will on Jan. 1 become vice-president and chairman of the executive committee of Blossom Products Corp. and Rayon Corp. of America.

Miss Martha Dunson, daughter of A. C. Dunson, president of Dunson Mills at LaGrange, Ga., is now in charge of the United Press bureau at Charlotte, N. C. She was formerly stationed with United Press at Atlanta, Ga.

Harry Taylor Brown, overseer of carding at the Payne Mill of Bibb Mfg. Co., Macon, Ga., recently completed 30 years of continuous service with the company.

Archie Chandler, vice-president of American Pulley Co., Philadelphia, Pa., has retired from active sales management of the firm to direct sales and service on the west coast, with headquarters at San Francisco. Frank E. Brown succeeds him as general sales manager.

J. C. Williamson of Union, S. C., sales representative for Bahan Textile Machinery Co. of Greenville, S. C., recently met with a serious accident at his home. His condition is reported as favorable despite a broken collar bone and several fractured ribs.

Frank S. MacGregor has been appointed general manager of the electrochemicals department of E. I. du Pont de Nemours & Co., succeeding Dr. E. A. Rykenboer, who retires Dec. 31 because of ill health.

C. H. Patrick, formerly superintendent of North Carolina Finishing Co. at Yadkin, is now handling supplies and offering technical service to the textile industry, with headquarters at Salisbury, N. C. He will act as broker of Pabst Sales Co. of Chicago, Ill., in the Southeast, and will handle Exize for this company in the South and Southeast. Exize is a concentrated malt enzyme now being used widely in the textile industry for the desizing of fabrics prior to their bleaching, dyeing and sanforizing.



C. H. Patrick

Robert T. Dunlap has been appointed general superintendent of the Buffalo, N. Y., plant of Wickwire Spencer Steel Co., succeeding W. A. Steele.

John A. McPherson has withdrawn as a partner in J. E. Sirrine & Co., textile engineering firm of Greenville, S. C.

Theodore A. Bassin, comptroller of Riverside & Dan River Cotton Mills, Inc., at Danville, Va., and J. F. Schneider, comptroller of Werthan Bag Corp., Nashville, Tenn., have been elected to membership in the Controllers Institute of America.

J. Lane Short is now general overseer at Kings Mountain (N. C.) Mfg. Co.

Gaston Gage, member of the Clemson (S. C.) College textile school faculty, is reported to be much improved from injuries received recently while hunting. He is expected to resume normal activities next month.

William R. Crabtree is now manager of Bennettsville (S. C.) Cotton Mills, purchased recently by Firestone Rubber Co.

J. E. Sirrine was one of the speakers at ceremonies held Dec. 1 celebrating the semi-centennial anniversary of Clemson College.

H. F. Hogue is now superintendent of the American Yarn & Processing Co. plant at Whitnel, N. C.

Arthur B. Howe has resigned as head of the cordage section of the War Production Board's textile, clothing and leather division. He has been succeeded by Edwin R. Metcalf. A. Louis Oresman, a partner in the firm of Aronson & Oresman, New York City public accountants, has been named a deputy director of the textile, clothing and leather division by J. Spencer Love, director.

Charles C. Bagwell has accepted the position of superintendent at the Lexington, S. C., plant of Martel Mills Corp.

K. M. Harris is now president of Morehead Cotton Mills at Spray, N. C.

Archie A. Drake recently completed 35 years of service with Bibb Mfg. Co., Macon, Ga. He is now vice-president of the firm.

Wade Short has accepted the position of superintendent at Queen Ann Mills, Ellenboro, N. C.

Paul A. Frank is not superintendent of Swift Spinning Mills at Columbus, Ga., as stated through error in the last issue of TEXTILE BULLETIN. He is in charge of the mill's third shift, and H. G. Lyon has been superintendent since the elevation of T. E. Raht to vice-president.

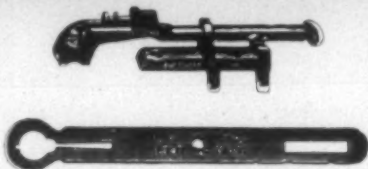
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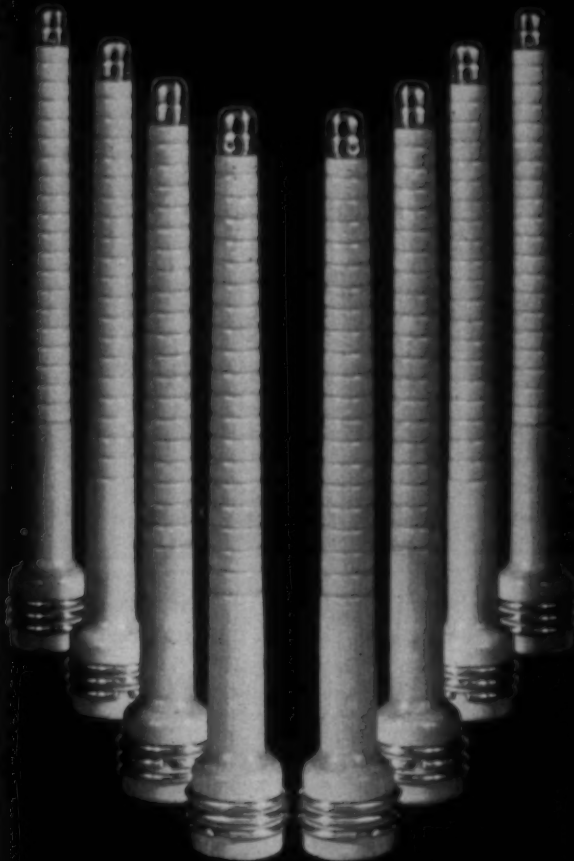
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Meat for Operating Executives

It's likely that the length of time between the last Southern Textile Association meeting and the one of December 11th had something to do with the enthusiasm of those present. But we are inclined to think that the unusual success of this convention was due mainly to the valuable and informative program which was presented.

Dean Malcolm Campbell of the North Carolina State College Textile School furnished an excellent outline of the part textile education can be expected to play in industry operations in the near future. The other addresses were aimed specifically at members of the association—textile mill operating executives. The remarks of Carl Harris gave them definite ideas as to what management expects of superintendents and overseers. Grover S. Tome of the War Manpower Commission reminded his listeners of the many practical uses which can be made of proper employee training.

A very special pat on the back goes to Dr. George D. Heaton for his most sensible suggestions concerning "Good Supervision." Among his audience were some who stated, without qualification, that this authority on labor relations made the best address ever presented to members of the Southern Textile Association. His words were "meat" for those present.

Special mention should be made of the part that associate members of the organization had in supplying entertainment at the meeting. True, some train and bus seats were taken up, some little gasoline and rubber was used in transporting the members to this meeting, but the "meat" that was available was undoubtedly well worth it.

Will Foster Textile Education

In our November 1st issue we stated that we understood that the J. E. Serrine Textile Foundation, organized by the textile manufacturers of South Carolina, will be primarily interested in technical research, but we have received a letter from William P. Jacobs which states that *"the exact opposite is true. The primary function is to broaden textile education at Clemson College Textile School specifically, and possibly in other educational institutions. We are concerned with the training of textile leaders and supervisory personnel for the mills and the finishing plants. We are not primarily concerned with research, and at least at the outset we will probably do none of it."*

We are very much pleased with that statement, because we feel that if the textile school at Clemson College is given the financial assistance necessary to obtain a staff of outstanding men, the students attending that school will benefit, and that ultimately the textile mills of South Carolina will feel the effect of better trained and more efficient operating executives.

With the North Carolina Textile Foundation, Inc., supporting the textile school at N. C. State College, the J. E. Serrine Textile Foundation giving similar support at Clemson College and the Textile Education Foundation, recently organized in Georgia, making it possible for the textile school at Georgia Tech to strengthen its staff, we see a great future for textile education in the South.

There are now enough organizations for textile research and we are much pleased to know that the organizations formed in North Carolina, South Carolina and Georgia will be primarily interested in broadening and improving textile education.

Registration of Labor Unions

Even while William Green of the American Federation of Labor was protesting before a U. S. Senate committee against a provision of the tax bill, recently enacted by the House of Representatives, a Gallup poll was being taken which showed that 75 per cent of the American people and 71 per cent of the members of labor unions were of the opinion that the provision should be adopted.

The provision, to which William Green objected so strenuously, did not mention labor unions but specified that all organizations should register with the Federal Government and each year give an accounting of the amount of money taken in from their members and the amounts expended.

The labor lobby had no objection to other organizations being required to register and give an accounting but somehow did not realize until the tax bill had passed the House that labor unions were included.

To require a labor union to comply with the same

regulations as other organizations is now denounced as anti-labor, but the bitter fight being made does not look well in view of the evidence that not only public sentiment but the will and wishes of the great majority of union members are against their position.

It would seem that the labor leaders are about the only people who are opposed to having the unions register with the Federal Government and give an accounting each year of the amount of money taken in from their members and the amounts expended.

The Gallup poll disclosed that many union members wish to know what their officers do with the money paid into their treasuries in dues and assessments, but apparently some of their leaders do not care to have them know.

There are many labor leaders who never make any accounting to their members of how much they collect or for what purpose or in what manner the money is expended.

Many of them receive far greater amounts than they ever admit and some put a portion of the collections in their own pockets.

Many of them, knowing that nobody will check their expense accounts or other expenditures, do not hesitate to pad them extensively.

We know of no other business in which money receipts and expenditures are as freely permitted to be made without auditing or accounting as those of the average labor union.

As long as such a system is allowed to exist, labor leaders ride upon the proverbial "gravy train" and it is not surprising that they have taken up arms against a provision of the new tax law which will, if enacted, will force them to render an accounting which can be seen by their members.

There is absolutely no reason why the cause of organized labor should be injured by requiring those who handle union funds to properly account for same.

Until the recent Gallup poll, very few people had any idea that 71 per cent of union members felt that the union leaders should be forced to render reports.

Container Re-Use

We would like to take time out for a minute to encourage the textile industry's participation in the container re-use program. Much of the supplies purchased by mills come in containers made from critical materials. Some of these show wear readily when treated harshly, but could be used time and time again if a little more effort was put to conserving them. Some containers are practically indestructible, but aren't kept in circulation.

Of this latter type we have chlorine cylinders in mind. There is sufficient chlorine for military and civilian purposes, but its distribution is currently being slowed by failure of users to return cylinders for

refilling as quickly as possible. It's a seemingly trivial matter, but a lot of people helping in many little ways can accomplish a great deal toward ending this mess.

Government Agencies

"I accuse the present (Hoover) administration of being the greatest spending administration . . . in all our history. One which has piled bureau on bureau, commission on commission. Bureaus and bureaucrats have been retained at the expense of the taxpayers."

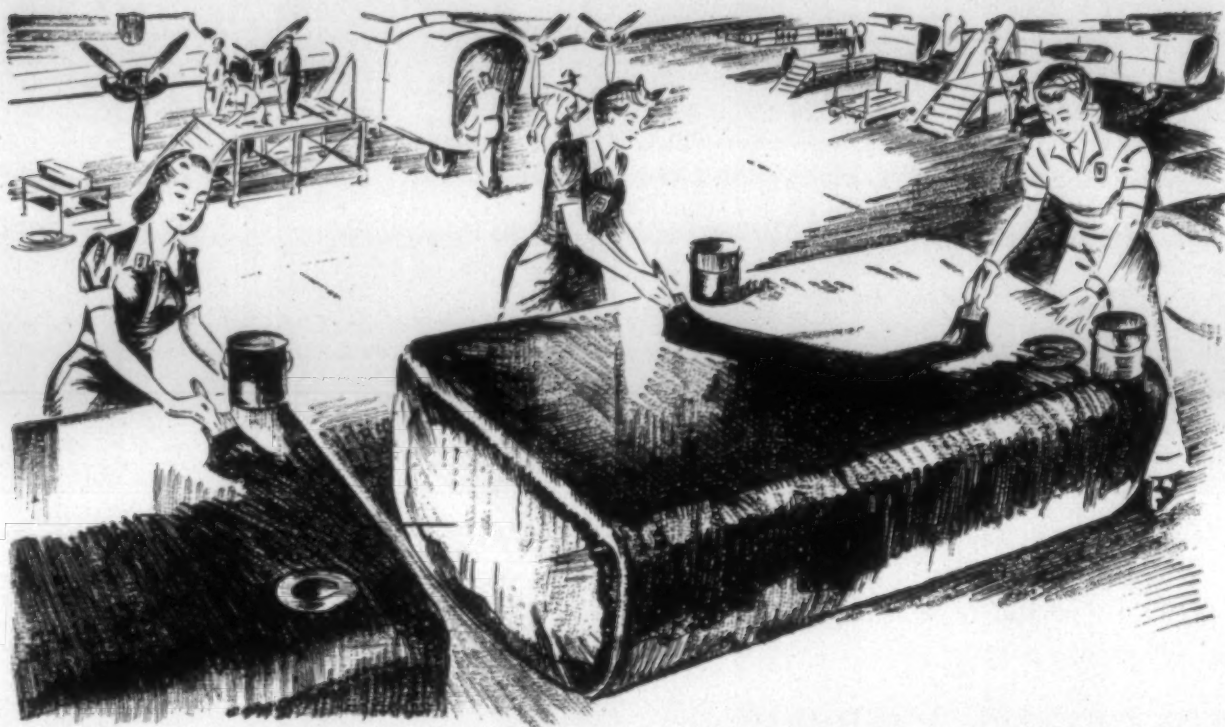
Franklin D. Roosevelt, Sioux City, Sept., 1932.

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BEW	FHA	PAW
BPA	FCIC	PRRA
BIR	FREB	PWRCB
BWC	FWA	PIWC
BCD	PRA	PRP
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Do not ask us to name them. The Government officers who have to make out checks to the employees, in some cases many thousands, of each alphabetical unit, know the names of the organizations, but we doubt that anybody else can name them. We couldn't even attempt to put them in alphabetical order.

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Franklin D. Roosevelt, Brooklyn, Nov., 1932.



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DYEING AND FINISHING

Notes on Naphthol Dyeing

By GEORGE BROWN

Part Four

Parts two and three of this series discussed various pertinent points on the preparation, manipulation and proper plant control methods on handling the substantive and lesser substantive naphthols suitable for package and raw stock dyeing. In this article the writer begins discussion of pertinent points on preparing, diazotizing and neutralizing fast color bases, handling and keeping them properly stabilized during the coupling operation.—Technical Editor.

FAST color bases are refined coal tar intermediates. The preparation, diazotizing and neutralizing (stabilizing) of fast color bases so that they couple (develop) correctly with the naphtholated yarn or other goods is the best illustration of applied organic chemistry which proves that every dyer of naphthol colors should have a clear practical knowledge of what is he is trying to do even if he does not have the technical knowledge to understand the theoretical points involved.

Practically all dyers running yarn or raw stock dyehouses are familiar with the mechanics of dyeing developed colors on cotton; so now to help explain the dyeing of naphthol colors, it is best to outline the dyeing operations of both classes of colors, as this will furnish better understanding of the technical points underlying each procedure.

Chemistry of Developed Colors

Developed colors are direct dyeing colors that possess an amino group (NH_2) in their chemical structure, and after being taken up or dyed onto a yarn, are then diazotized and developed into a new color on the yarn. The diazotizing operation occurs through entering the direct dyed yarn into a diluted cold bath containing proper proportions of muriatic or sulfuric acid and sodium nitrite; nitrous gas is liberated and this changes the amino group into an azo group ($\text{N}:\text{N}$) when carried out cold and away from direct or indirect sunlight. This dyed yarn now in a diazotized condition is entered into a coupling (developing) bath containing dissolved beta naphthol or some other developing agent which chemically combines with the color on the yarn to form a new dyestuff known as the developed dyed shade on the yarn.

Naphthol colors may be described as similar to the developed colors' dyeing and chemical operations but carried out in reverse order; this, however, is not entirely true. Yarn or any material is first dyed with naphthol and when this

operation is completed the material is naphtholated. While the naphtholating of the yarn is being carried out in a machine the fast color base is being diazotized and neutralized in a separate container ready for the goods when the naphtholation is completed. The neutralized diazotized base solution is then entered into a machine and combines (couples) chemically with the naphthol (naphtholates) on the yarn, thus forming a new chemical compound which is the dyed naphthol shade.

Within the past ten years there has been a great improvement made in the manufacture of fast color salts which are compounds prepared from diazotized fast color base solutions, neutralized and stabilized, then prepared in a soluble powder form.

Dyers of naphthols can simplify their naphthol dyeing procedure further by dyeing the material with the naphthol, then coupling (developing) the shade with the required amount of fast color salt in a fresh bath, thus making two dyeing operations instead of three.

Fast Color Bases—Discovery and Development

Robert and Thomas Holiday made the discovery in 1880 that cotton material impregnated with a beta naphthol solution and then treated with a diazo compound of paranitro-aniline or beta naphthylamine would produce, respectively, para red and a duller red on cotton. The colors developed on the cotton yarn were water insoluble pigments and they were the forerunners of present-day naphthol colors. These initial products were difficult to handle and it was 20 years before these base compounds were properly purified so that printers and dyers could obtain uniform results on the processing of them.

The use of beta naphthol was cumbersome, but in the early 1900's derivatives of beta naphthol were discovered which gave greatly improved fastness as well as ease of operation for dyers and printers. Then the adoption became widespread and a large amount of development work was carried out in producing many new bases and finally the stabilized diazotized base compounds, better known as fast color salts. The derivatives of beta naphthol were the Naphthol AS series which nowadays comprises a large range of substantive and non-substantive type naphthols.

The average practical dyer can thoroughly grasp the preparation and handling procedure necessary for the dyeing of the substantive and non-substantive naphthols on goods as they act very similar to the direct colors on cotton or rayon, but regarding a full understanding of the preparation of



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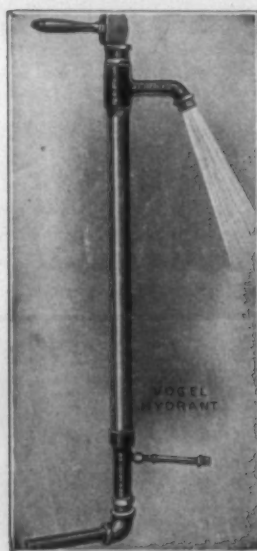
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fast color bases and how they act in the coupling (developing) bath is just too technical and complicated. The practical dyer is not the only one that does not possess a basic technical understanding of these technical points; in fact, the so-called technical men of many dyestuff companies are largely to blame for their failure to study and know the technical fundamentals and how to apply this information in practice. Many plants blame the dyers for not having a better knowledge of naphthols, but the trouble may be traced back to the makers of these products and their apparent lack of desire to let the dyers and their own technical representatives have too much real technical information; otherwise, a routine preparation procedure which may work fairly well in one plant and give poor results in the next. In such cases, a really able dyestuff technical man will face the facts and try to ascertain what local conditions may contribute to this failure; so then he will check (1) water supply, (2) type of yarn, raw stock or material to be dyed, (3) dyeing equipment, (4) local plant conditions, such as steam supply, etc., and (5) chemicals, general care taken in the proper storage of chemicals, dyestuffs, and the general care used in handling them before dyeing operations are carried out. Many dyestuff companies may feel that their representatives are wasting their time when they do all this outside work instead of getting busy on making a dye and matching the shade wanted, but those companies that are "called back" for a second job at the plants are the ones that try to do a complete and thorough job whether large or small.

Here are several of the troublesome matters that every dyer, plant chemist and dyestuff technical representative is up against in the preparation of fast color bases and dyeing of uniform shades from one dyelot to the next:

(1) Uniformly purified fast color bases (bases, to be prepared satisfactorily, must be free of all organic and inorganic impurities; these impurities cause tarry formations and other insoluble residual formations during the diazotizing and neutralizing operations. The writer has observed cases of bases being "doped" up with agents to improve some one or two preparation characteristics such as dispersing quickly or having filtered through various filtering medium to remove excess discoloration).

(2) Work out a preparation, diazotizing and neutralizing procedure, free of the various "cure-all" compounds and use only those chemicals and agents that show actual benefit on that particular job being worked on.

To illustrate this point of using only those chemicals and special agents that are essential for a satisfactory job, fast color bases being in a powdery or granular condition are usually quite difficult to paste up into a thin watery paste through using only water (cold or hot according to base being prepared) and may start lumping up or form a large amount of grainy residue, so a dyer must find a desirable agent to disperse both the powdery and granular type of bases up quickly. Such a dispersing agent must possess many valuable properties besides that of dispersing bases into a watery paste preparatory to the addition of muriatic acid and the sodium nitrite for diazotizing process; some of these properties that such an agent must have are: (1) high resistance and stability to mineral acids such as muriatic acid and remain stable under long processing periods; (2) high resistance and stability to the diazotizing and neutralizing processes; (3) high resistance to organic and inorganic salts such as calcium, magnesium, zinc, sodium,

aluminum, iron and other agents that may occur in the base, chemicals and water supply; (4) ability to act as a leveling and penetrative agent for the diazotized and neutralized base solution during the coupling (developing) operation; (5) non-foaminess is highly desirable. While assisting in aiding the levelness and penetration of the yarns or goods during the coupling operation, this dispersing agent must not be excessively foamy, as it may cause air pockets for form during the dyeing of cotton raw stock; (6) high rinsibility. After the material has been dyed with the naphthol colors, they must be given a thorough soaping off and this dispersing agent must be easily rinsable so it can be removed from yarns or goods.

Two of the products now being widely used for this purpose of dispersing the fast color bases are Diazopon A, General Dyestuff, and Stabilon, American Aniline.

R. E. Henry Speaks To Senate Group On Renegotiation

Robert E. Henry, the president of Duncan Mills at Greenville, S. C., recently acted as spokesman for the cotton textile industry when he appeared before the finance committee of the U. S. Senate, which was at the time considering the new general tax bill.

Mr. Henry insisted that the renegotiation law can serve no important pricing function in established industries producing standardized commercial articles on a mass production basis, especially when the sales of such articles are made under OPA ceiling prices. He recommended, on behalf of the cotton textile industry, that the tax law be amended to make mandatory by statute the exemption of contracts for the manufacture of standard commercial products produced on a mass production basis and sold under OPA price ceilings.

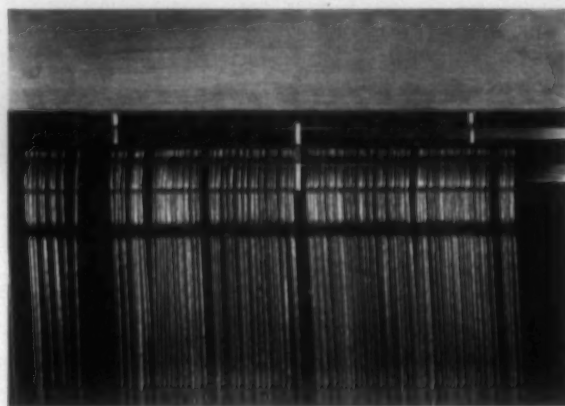
"The renegotiation law, according to its proponents, was enacted to cope with two unavoidable wartime necessities," said Mr. Henry. "First, the necessity of obtaining rapidly many new articles concerning which no previous cost experience was available.

"Second, the necessity of obtaining large quantities of other articles previously manufactured in such relatively small quantities as to make previous cost experience of little value under mass production.

"In the case of industries manufacturing materials under either one or both of these conditions, the renegotiation law could perform an important pricing function and at the same time achieve the objective of recapturing profits, which, even under the excess profits tax provision, could have been considered unreasonable and excessive. To what extent these same conditions obtain in the present stage of our war production and procurement program, I am not prepared to say. In my sincere opinion I doubt that these conditions ever did prevail in established industries that have produced for many years standardized articles on a mass production basis primarily for civilian consumption, and in the cotton textile industry they do not exist today.

"The military fabrics produced by this industry are basically the same as the commercial fabrics it has been producing on a mass production basis for many years. When some changes were necessary they were not of a material character and the costs involved were predictable with reasonable accuracy by both the procurement officer and the contractor."

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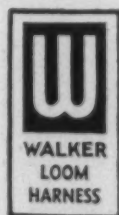
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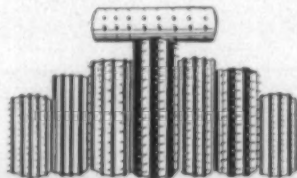
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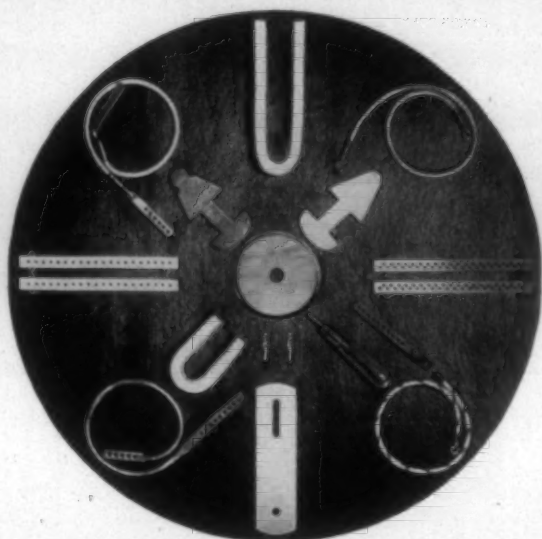
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Frank Walton, Henry Geibel, Ward Proctor and George Ward, recently retired from War Production Board work, were honored Dec. 7 in New York City at a dinner held under the auspices of the Textile Square Club. More than 300 persons connected with the textile and garment industries joined in the tribute.

Frank Walton, who had been in Washington nearly three years, the past year as director of the textile, clothing and leather division of WPB, struck an important note in suggestions which he offered in the way of a program that would keep the industry operating at full speed during the armistice period, one of the most important considerations now before these and other industries.

Recommendations that the Government establish "a fair price for regular production and an 'offset' price for production which costs more to produce" were made by the former WPB divisional director, under a suggested five-point plan. This would involve (1) declaration of certain materials and products which are needed or in short supply as essential; (2) making available experienced labor sufficient to produce quantities needed; (3) allowance of a fair price for this production; (4) allowance on an "offset price" for extra shifts and overtime production, and (5) allowance of an "offset" price for marginal mills. He continued that this would not seriously affect the economy of the country, nor affect consumer prices, nor be inflationary.

Dr. Claudius T. Murchison, president of the Cotton-Textile Institute, Inc., gave a verbal picture of the sacrifices involved when working for the Government in Washington. "WPB is one of the most efficient agencies of the Government," said Dr. Murchison.

"Not only that, but it certainly has been one of the most pleasant and most co-operative agencies to work with in Washington. The system of controls set up by the textile division of WPB covers at least three-quarters of the industry. In some industries, great disturbances would have accompanied such a vast system of control, but the textile division accomplished all of this with ease and with a minimum of upsetment."

Hugh Comer, president of the American Cotton Manufacturers Association, also appeared on the program.

South Central Chemists Meet Dec. 17

Election of officers for 1944 and technical papers will be features of a meeting of the South Central section of the American Association of Textile Chemists and Colorists to be held at Chattanooga, Tenn., Dec. 17. The section is now headed by Jack Anderson as chairman. J. A. Crumley is among those who will present technical papers, in this case the one entered by the section in a recent competition held by the national body in New York.

Acme Steel Co.'s 750 Archer plant employees and management were awarded the Army ordnance banner for meritorious production. The citation, made Nov. 22 at Chicago, Ill., stated that the recognition given was for "supplying ordnance with normal and emergency demands promptly and with the greatest degree of co-operation." Capt. L. C. McEvoy, an ordnance officer, made the presentation to employee representatives of the Acme office and factory.

Cocker Machine Buys Massachusetts Business

Cocker Machine & Foundry Co. of Gastonia, N. C., has purchased from J. Ziskind of Fall River, Mass., all goodwill, name, patents, patterns and equipment of the T. C. Entwistle Co., Lowell, Mass. All of the Entwistle business is being removed to Gastonia immediately and consolidated with the Cocker business activity there. Entwistle, for many years located in Lowell, Mass., has done a country-wide textile machinery business specializing in high speed warping, spooling and other precision equipment. In more recent years, and for about 25 years, Cocker Machine & Foundry Co. of Gastonia has been growing increasingly important in similar activities. Now both businesses, consolidated under Cocker Machine & Foundry Co., multiply the efficiency and service of the Gastonia organization.

Textile Manpower Needs Will Remain Constant

Manpower needs for the six months ending next July in the textile industry will be much the same as those for 1943, according to a recent estimate made public by the War Manpower Commission.

Requirements from July, 1943, to July, 1944, in the textile industry remain at 2.7 million, just as for the year ended July, 1943, and as compared with 2.8 million for the year ended July, 1942. The estimate comes from the Bureau of Labor Statistics and the War Manpower Commission reports and analysis service.

Textile Exhibits Featured At Chemical Industries Show

Pigment printing and pigment dyeing of fabrics with Aridye colors was one of the innovations featured in the American Chemical Society booth at the Chemical Industries Exposition, held this month in New York City. The exhibit told the basic story of the adaptation of pigments for fabric finishing with illustrations of a typical padding range and photomicrographic pictures showing the firm bond between pigment and the fabric fiber that is one of the outstanding accomplishments of modern pigment printing and pigment dyeing.

Also in the exhibit were samples of

camouflaged shrimp nets treated with flameproof and mildewproof pigmented compounds, mosquito netting treated with extremely lightfast pigments dispersed in a Ceglin solution to give shrinkage control and a permanent finish. Printed shirtings, pad dyed rayons and novelty fabrics that have been printed by the silk screen method, or airbrush for a light, airy effect, illustrated the great potentialities of pigmented textile colors.

Among the products shown by Hercules Powder Co. were cellulose acetate, ethyl cellulose, chemical cotton and terpene products.

Titanium Alloy Mfg. Co. exhibited for the first time a group of zirconium base dyestuffs which has been developed by the company.

Glyco Products Co. showed a wide range of textile processing agents, including synthetic waxes, emulsifying agents, plasticizers, flameproofing and waterproofing materials.

Among machinery manufacturers, the Proctor & Schwartz exhibit was devoted to drying equipment, a dryer for rayon on cakes and a tenter dryer for blanket cloths being featured in a photographic display.

The Brabender Corp. showed one of its Viscographs, a recording viscometer, measuring the gelatinization properties of starch, the influence of liquefying enzymes upon the gelatinization property and changes in viscosity due to temperature increase of starches, enzymes, textile sizing, resins, glues and dextrines.



With shipping room workers hard to get, you need all the man-hour savings made possible by the Stanley Steel Strapping System. With this simple, easy to learn method, packages are made ready to go, *faster*.

Cartons, boxes, bundles, and bales are also made ready to go *anywhere*, because Stanley Steel Strapping reinforcement gives dependable protection against the damaging shocks of rough handling, long transit. Since

containers can be lighter, and less bulky, valuable cargo space is saved.

The Stanley Steel Strapping System includes tools, reels, and accessories for every purpose, — everything you need to insure maximum protection and to speed up shipments. Write for details. The Stanley Works, Steel Strapping Division, New Britain, Connecticut.

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Cotton Goods Market

NEW YORK.—Distribution centers take the view that slight ceiling increases in prices of certain staple-type cotton textiles, permitting mills to make these items profitably and at the same time allowing for extra costs incurred in operating extra shifts, would do much toward combatting inflation.

The tempo of trading in the cotton gray goods market during recent weeks showed signs of picking up, only to fall back after each spurt to the monotonous filling in of Government requirements. Short-lived revivals of activity were registered in a few sections of the market, but the yardage involved was far from enough to support the contention in some quarters that more goods are likely to come out before the turn of the year.

Proximity of the opening of the first quarter is viewed in some centers as likely to see releases of minor quantities of some goods as well as a slight loosening up in sales for the first quarter. The continued tightness of cotton textiles of all kinds and the difficulties of getting supplies even on high priority ratings is viewed with concern in many quarters. This protracted spell of inactivity has led to the belief that some change should be expected and the waiting period relaxed. Hopes for any large quantities of goods coming out, however, are held remote, especially in view of the expectancy of the issuance of Government regulations that may affect the amounts of priority rated orders that mills must handle.

Actual trading in the cotton gray goods market has been substantial for the account of military needs, but meager in respect to civilian supplies. The avalanche of Government contracts and priority-rated orders shows no signs of being stopped, with most sellers taking the attitude that nothing can now be asked of them that would surprise them.

Buyers holding high priority ratings are often disappointed in not being able to obtain merchandise, attesting to the heavy number of such orders in the market.

Yet, the opinion is strong in a number of centers that supplies for consumer purposes will be forthcoming in fairly good quantities in the near future. Clarification of the status of various Government regulations, easing in the buying for direct military needs, and the passing of the fiscal year of many business concerns are all looked upon as likely to result in a resumption of selling.

Calls for goods on priorities are still very strong, but distributors continued to mark time pending the outcome of Government rulings, and a let-up in military contracts is held remote in the light of the heavy number of rated orders circulating around the market.

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Cotton Yarns Market

PHILADELPHIA.—Cotton yarn continues to be one of the worst bottlenecks of textile production in the whole war economy. The rate of shipments and new bookings of cotton sale yarns now being reported by mills indicate that civilian consumers of such yarns entering January will be less fully covered ahead than at any previous time during the war period.

Continuing consideration of the outlook for large release of cotton yarn for civilian uses, now earmarked for war purposes, is said to show that even in the event there is a general termination of Government orders affecting such yarn, little of it will have to seek a sale. In effect, war-end termination of present Government orders simply will mean, for the spinners (who are sub-contractors), a re-writing of the terms of their contracts, which would represent possibly a change in the count and kind of yarn to be spun, and possibly a change in the contract price.

It is shown from the reported billings that about 60 per cent of all the single and two-ply combed gray yarn is being applied to Government orders. This is excluding mercerized yarn. Of the remaining 40 per cent, part is going into mercerized yarn for non-military uses. Of the net balance of gray yarn, as of Jan. 1, 1944, the majority of spinners will have unfilled orders for less than one month's consumption at the present rate.

This indicates that, as a manufacturing material for civilian use, combed sale yarn is almost unobtainable, especially in those counts that for many months have been largely preempted by the armed forces. Resort has been had, wherever possible, to the substitution of carded for combed yarn for Government use.

During the last six months it has been said frequently that Washington authorities want to ease the scarcity of civilian supplies of yarn and other commodities. This scarcity has not been lessened, as far as combed sale cotton yarns are concerned, nor is there any prospect that it will be for the duration. Also, when any part of the burden is lifted from combed yarn, it goes immediately onto those counts and kinds of carded yarn that are most expensive to produce, from the standpoint of both raw material and labor.


Observers have pointed out scattered instances over the last few weeks of carded yarn being made available from sources which, for months back, claimed to be completely sold ahead for the counts being sought.

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Now is a good time to sell us your
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Wire or write offerings

D. W. PEACH & Co.
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"Hay" and "Bow" Say, Merry Christmas!

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Penetrating Penetrant!

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**Brother, you are looking
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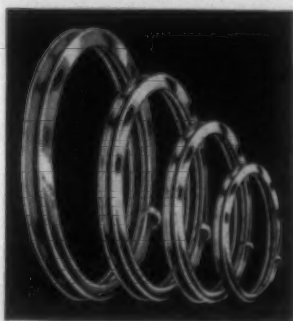
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These Four Features Mean Greater Spindle Efficiency

- Smoother finish, greater resistance to dry abrasive wear, due to improved patented process of case-hardening.
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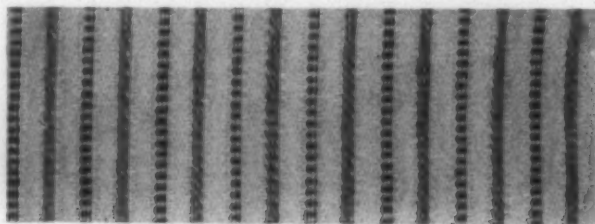
CHARLOTTE, N. C.

W. H. MONTY, Pres. and Treas.

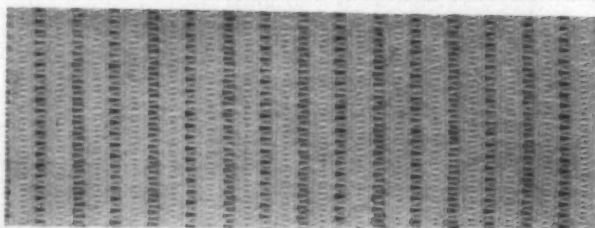
Practical Textile Designing

(Continued from Page 30)

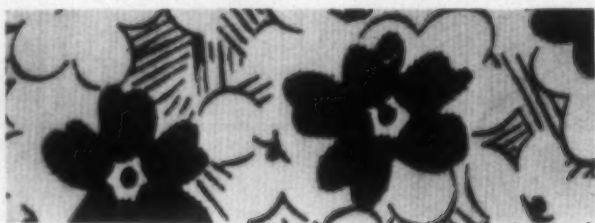
would be used with this design by drawing more ends to the dent. Fig. 324 also illustrates a drawing-in draft and reed plan, made with four harness shafts for each wale and is the same design as Fig. 322. Fig. 325 is the chain plan.



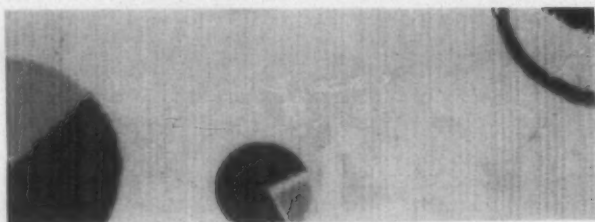
326-A



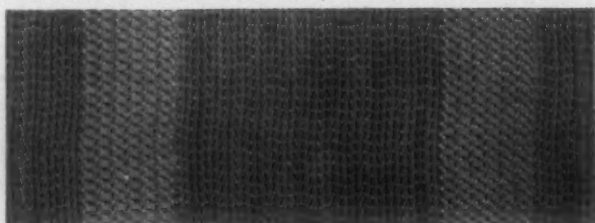
326-B



326-C



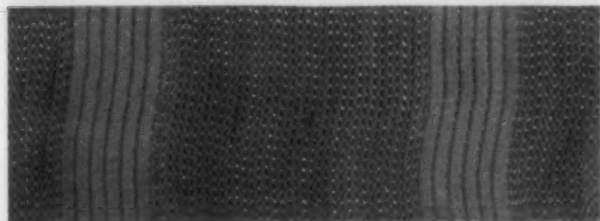
326-D



326-E

Fig. 326-A illustrates a cotton warp pique trousering showing the face of fabric. Fig. 326-B shows the back of this fabric. No wadding ends are used. Fig. 326-C illustrates a fine cotton printed summer dress goods fabric with 28 wales per inch in fabric, with one wadding end in each wale. Fig. 326-D illustrates a printed summer dress goods

warp pique fabric with different widths of wales. Fig. 326-E illustrates a fancy warp pique fabric for summer wear,



326-F

cotton warp, rayon filling. Fig. 326-F shows the back of this fabric. Two wadding ends are used in each wale.

Sales of Used Textile Machinery Now Unrestricted

All restrictions on the sale and rental of used textile, clothing and allied machinery have been lifted by the War Production Board.

The amendment to Order L-215 represents a complete revision of previous controls over the sale or lease of used or re-built textile machinery, industrial sewing machines and clothing-making machinery. Restrictions of varying degrees had previously been imposed on transfer of such types of equipment, based primarily on dollar value of the machines involved.

Also excepted from provisions of the order are (1) repair, maintenance and operating supplies as defined in Order P-139; (2) parts and attachments to industrial sewing, clothing, shoe and leather working machinery when such attachments are purchased for conversion purposes only; and (3) delivery of machinery or attachments resulting from the sale of a continuing enterprise in which no change in production or operation is contemplated.

Written into the amended order are criteria for granting applications for permission to produce or sell specified types of machinery submitted on Form WPB-1823. It is made clear that the following points will be considered: availability of the type of machinery in question, essentiality of products to be made on the machinery; productive capacity and condition of the replaced or supplemented machinery; and available labor supply in the area where the machinery is to be used.

Schedule A appended to the order now lists all types of machinery for which production and sales schedules must be submitted to WPB. Schedules on WPB-1805 covering textile machinery must be filed on or before the thirteenth day of each month, while schedules on Form WPB-1806 covering all other types of machinery are required to be filed not later than 15 days following the end of each calendar quarter.

Culbreath Is Agent for Master Electric

The E. F. Culbreath Co., 811 Johnston Bldg., Charlotte, N. C., has recently been appointed factory representative for the Master Electric Co. in western North Carolina and all of South Carolina. Master Electric Co. offers a complete line of motors from one-tenth to 100 horsepower, as well as the Master Speedranger, a variable speed device said to be both compact and efficient.



"better impregnation
of fibres!"

Johnson's DRAX

the water repellent made
by the makers of
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Why better impregnation from Johnson's DRAX? The answer lies in a special method developed by S. C. Johnson & Son which makes the colloidal particles of DRAX extremely uniform in size. The result is better impregnation of fibres... and uniform, even distribution on the entire run of cloth.

Have you tried DRAX? Here are other features found in this water repellent:

DRAX is noteworthy for its ease and economy of application

DRAX may be diluted with ordinary tap water

DRAX helps improve hand

DRAX has an excellent "money value"

Further, to help you meet the mildew problem, we have developed DRAX 1860PMA. This special formula contains sufficient quantity of phenyl mercuric acetate to provide a mildew-proofing which meets the microbiological test for *chaetomium globosum*. DRAX 1860PMA DOES NOT LEACH OUT READILY.

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John:
Those analyses
which the Penick &
Ford Textile Lab-
oratory in Atlanta
made for us certainly
helped solve our warp
sizing problems.
Jim

Employees and the "E"

(Continued from Page 28)

'E' award, the highest recognition that can be given by your Government to civilian war workers. Most of all, however, I welcome this opportunity to commend you on your important work in helping our fighting men on the battle front to win this war."

William Beaumont, general manager of Bath Mills, in replying to General Walsh, said in part: "It is our privilege to be gathered here today to receive recognition from the Army and Navy. It is, in fact, a proud day for all of us here at Bath Mills. It brings to us a thrill of pride and added responsibility. Pride for the fine job we have done working together, and responsibility for our maintenance of the recognition our Government has seen fit to give us."

"I am sure you will agree with me when I say that we will accept this award with full appreciation of its meaning and intent. We greatly appreciate the generous remarks you have made about us and assure you that we will make every effort to continue and improve upon the record we have made."

Service pins were awarded to 1,162 employees of the plant by Lieut. Leonard Williamson, U. S. N. R., and were accepted on the part of the employees by Mrs. Kate Feaster, a veteran employee of the mill.

Tennessee Eastman Corp.'s contribution to the war effort was lauded when the Army-Navy award for excellence in war production was presented to the company during ceremonies Dec. 6 at Kingsport, Tenn.

The company is producing a new explosive for the armed forces, said Maj.-Gen. Charles T. Harris, Jr., commanding general of the Aberdeen Proving Grounds, Aberdeen, Md., when, in a dual ceremony he presented the "E" to the plant and to the Holston Ordnance Works.

Army-Navy pins were presented to worker representatives of the plants by Lieut.-Comdr. H. H. Heine, U. S. N. R., Office of Naval Materials, Atlanta, Ga. He was assisted by Pfc. Jack R. Shipley of Kingsport, employed at the ordnance plant. P. S. Wilcox, president of the Eastman plant, accepted the "E" awards from General Harris.

Another "E" ceremony took place at Kingsport Dec. 14 when Capt. C. W. Fox of the U. S. Navy bureau of supplies and accounts presented a pennant to Borden Mills, Inc. The flag was received by John C. Borden, vice-president and treasurer of the company. Presentation of the "E" lapel pins was made by Maj. Hugh Clark, Jr., public relations officer of the Charlotte (N. C.) Quartermaster Depot.

Most recent Southern textile mill to be named as a recipient of the war production flag is Swift Spinning Mills of Columbus, Ga. Ceremonies will take place Dec. 29, with Col. C. W. Woodward, commandant of the Charlotte Quartermaster Depot, making the presentation.

Southeastern Chemists Elect Edwards

O. D. Edwards of Sylacauga (Ala.) Mills was elected chairman of the Southeastern section of the American Association of Textile Chemists and Colorists at their evening meeting Nov. 27, held in the Atlanta Athletic Club.

J. M. Smenner of Eagle and Phenix Mills, Columbus, Ga., was named vice-chairman; William Griffin of Kali Chemical Co., Atlanta, succeeded Lee L. Baker of Tesco Chemical Co., Atlanta, as secretary. Laurie Whittelsey of

Southern Dyestuff Co., Macon, Ga., replaced George L. Dozier of Sandoz Chemical Works, Marietta, Ga., as treasurer.

R. W. Philip, who at the first of the year becomes connected with the Callaway Mills, continues as the national organization's representative to the Southeastern section. Attended by 110 from four states, the gathering heard Retiring Chairman John P. Harrison, Dundee Mills, Griffin, Ga., and William Griffin. After the first of the year, Chairman Edwards will announce the next sectional meeting date.

The section committee includes: James C. Farrow, Russell Mills, Alexander City, Ala.; Riley Jones, Dundee Mills; M. T. Barnhill, Sylacauga Mills; H. Nuttall, Lanett (Ala.) Bleachery & Dye Works; Marvin Youngblood, Callaway, LaGrange, Ga.; James W. Swiney, Fulton Bag & Cotton Mills, Atlanta; John F. Armstrong, Spalding Knitting Mills, Griffin, Ga.; and R. O. Simmons, Pepperell Mfg. Co., Lindale, Ga.

Firm Is Now Tubize Rayon Corp.

The stockholders of Tubize Chatillon Corp., at a special meeting recently, approved the company's re-capitalization plan and authorized a change in name to Tubize Rayon Corp.

The re-capitalization plan calls for the exchange of the present Class A and common stock for shares of new common on the basis of four shares of new common for each share of present A and one-half share of new common for each share of present common.

Macia To Be A. A. T. T. President

Lieut. William F. Macia, U. S. N. R., of the Brooklyn Naval Clothing Depot now on leave from A. M. Tenney Associates, was placed in nomination for president of the American Association of Textile Technologists in the report of that organization's nominating committee made at a recent meeting in New York City.

For first vice-president, Carl I. Taber of the acetate division of E. I. du Pont de Nemours & Co., was selected, and Pierre Sillan of American Viscose Corp. was nominated for re-election to the post he now holds, that of second vice-president.

The incumbent secretary, Miss Bernice S. Bronner of Good Housekeeping Institute, and the present treasurer, Ralph M. Gutekunst of Hellwig Silk Dyeing Co., were proposed for re-election to the posts they now hold.

The committee selected three men for election as governors of the association to serve for three years. These are John F. Hagen, retiring president, who is with Callaway Mills; Fred Noechel, Botany Worsted Mills, and George Linton, textile department, Central High School for Needle Trades, New York.

To fill the vacancy on the board to be caused by the election of Mr. Taber to the vice-presidency, the committee nominated George B. Suhrie of Fox, Wells & Warren to serve as a governor for two years.

Election will be by letter ballot before the January meeting, at which time the newly-elected officers will take over their posts.

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OUTSTANDING
Conditioner
for
Textile Fibres

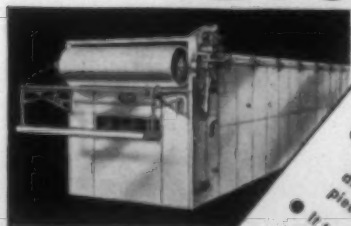
- Helps separate long fibres from short
- Prevents waste by saving good fibres
- Makes fibres more supple, pliable
- Provides control of conditions caused by static electricity
- Protects cards and preserves the wire
- Safeguards health, insures better working conditions by preventing Dust and Fly

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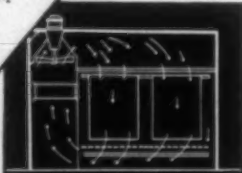
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ORIGINATORS OF THE BRETON MINEROL
PROCESS FOR CONDITIONING FIBRE.

JOIN US WE HAVE TOPPED OUR **10%**
WAR SAVINGS BONDS EVERY PAY DAY

PROCTOR *Loop* DRYER



- This is a completely new type of automatic loop or festoon dryer for drying dyed or finished piece goods without tension.
- It takes goods as it comes out of a finishing quench, or in the case of dyed goods, from a truck.
- The material is carried through the dryer while heated air, circulated at high velocity by fans of special Proctor design, is directed down into each loop.
- As the goods on which the goods are suspended move through the dryer, they revolve intermit- tently, so that no part of the goods is in contact with anything for any appreciable length of time.
- The New Proctor Loop Dryer assures perfectly uniform results and offers unheard-of capacity in a very compact unit.



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How do you feel about the product you use and those who make it?

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STERLING RING TRAVELER CO.
FALL RIVER, MASS.

OBITUARY

D. H. MORRIS, JR.

D. Hamp Morris, Jr., 58, well-known Southern cotton mill executive, died Nov. 26 at Dothan, Ala., following a sudden heart attack. Besides being president of the Alabama Cotton Manufacturers Association, Mr. Morris was president of Geneva (Ala.) Cotton Mills, a partner of Montgomery (Ala.) Cotton Mills and Bama Cotton Mills at Enterprise, Ala. Funeral services were held Nov. 28 at Geneva.

J. H. WINDLE

Joseph H. Windle, president and treasurer of J. H. Windle & Co., textile machinery and equipment firm of Providence, R. I., died Nov. 22 following a long illness.

Mr. Windle was born in 1883 at Fall River, Mass., and began his textile career at the age of 16. During his life he was connected with a number of textile mills and machinery firms, and in 1936 founded the business he headed. He was a member of a number of civic and social organizations. Surviving are his wife, two sons, a daughter, three sisters and a brother, and four grandchildren. Services were held Nov. 26 at Barrington, R. I.

G. O. COBLE

Gurley O. Coble, 72, a member of the board of directors of Roxboro (N. C.) Cotton Mills, died Dec. 2 after a short illness. He was a cotton broker at Greensboro, N. C., for the past 20 years. In 1897 Mr. Coble became the first superintendent of Proximity Mfg. Co. at Greensboro, and later was secretary-treasurer of Roxboro Cotton Mills, Locke Cotton Mills at Concord, N. C., and Pomona Cotton Mills at Greensboro. Funeral services were held Dec. 4 at Greensboro.

T. M. LILLARD

Thomas Mason Lillard, 73, former vice-president of Chatham Mfg. Co., died Dec. 13 at Elkin, N. C. He was with the woolen mill for more than 50 years prior to his retirement. Surviving are his wife, three daughters, five brothers and four grandchildren. Services were held Dec. 15 at Elkin.

ROBERT D. HOWERTON

Robert D. Howerton, 42, former sales manager for the Charlotte, N. C., office of American Cyanamid's Calco Chemical Division, died early this month in a hospital at Evanston, Ill., following an illness of several weeks. At the time of his death he was Chicago district manager for Calco. Prior to his affiliation with Calco he was a Southern sales representative for Smith, Drum & Co. with headquarters in Charlotte. He is survived by his wife, three children, three sisters and three brothers. Funeral services were held Dec. 7 at Winnetka, Ill.



Officers of Safety Council's Textile Section Are Named

Members and officers of the National Safety Council's textile section were elected for the 1943-44 term when the nationwide organization met last month in Chicago. John J. Burger of W. J. Dickey & Sons, Inc., Oella, Md., was named general chairman of the section and David Z. Walley, personnel and safety director at Peerless Woolen Mills, Rossville, Ga., was elected vice-chairman.

This group within the council's membership conducts its own program, suggests and approves the special services prepared by the council, conducts its own activities for the particular benefit to the textile section.

Listed below are other newly-elected officials, who will have much to stay in guiding and helping to develop organized accident prevention work throughout the entire industry:

Secretary and news letter editor, E. G. Padgett, director of safety, North Carolina Industrial Commission; engineering and safe practices pamphlet committee chairman, H. E. Williams, safety engineer for Marshall Field & Co., Spray, N. C.; health committee chairman, D. A. Purcell, superintendent, Marshall Field & Co., Draper, N. C.; membership and publicity committee chairman, W. T. Taylor, superintendent, Merrimack Mfg. Co., Huntsville, Ala. Members-at-large include Frances Bethune, R.N., Firestone Cotton Mills, Gastonia, N. C.; H. R. Corey, comptroller, Beacon Mfg. Co., Swannanoa, N. C.; and W. B. Weaver of the manufacturing division of Marshall Field at Spray.

Navy Denim Orders Spread Equitably

Acting to spread equitably throughout the industry a Navy procurement of 33,500,000 yards of denim, the War Production Board has instructed all major producers in the field as to the exact portion of the procurement each is obligated to accept.

The material is for production of Navy dungarees and jumpers and will be made largely on looms recently reconverted by WPB order from production of osnaburgs to denims.

A letter was sent to the industry to make it clear that between Sept. 15, 1943, and June 15, 1944, each producer would turn out a specific quantity of denim fabric for the Navy.

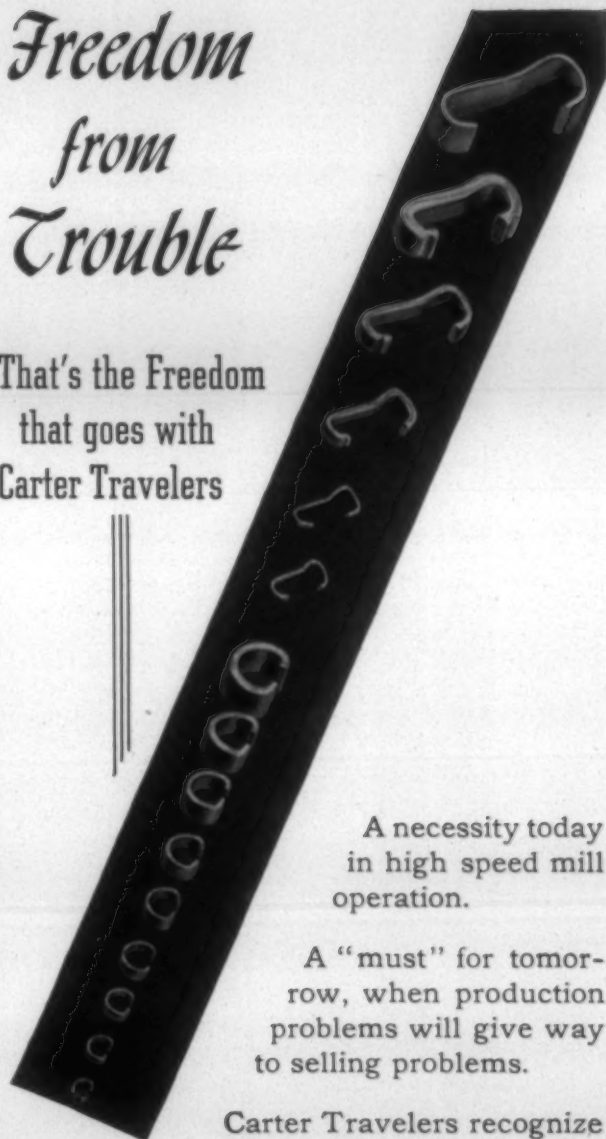
Any orders from the Navy in excess of this specific quantity need not be accepted, but the denim manufacturer should inform the Navy contractor of the WPB permission to reject "excessive orders" and advise the contractor that the goods must be obtained from other mills. A copy of this letter should be forwarded to WPB.

It was explained that, through adoption of this technique, there is assurance that all Navy procurements will be met and also that denim producers will be able to assign part of their facilities on a uniform basis for fulfillment of non-military contracts.

American Viscose Corp. has appointed Beaunit Mills, Inc., of Lowell, N. C., and Stonecutter Mills Co., Inc., of Spindale, N. C., as finisher licensees, each being fully qualified to dye and finish rayon fabrics in accordance with the standards established under the rayon producing firm's "Crown" Tested plan.

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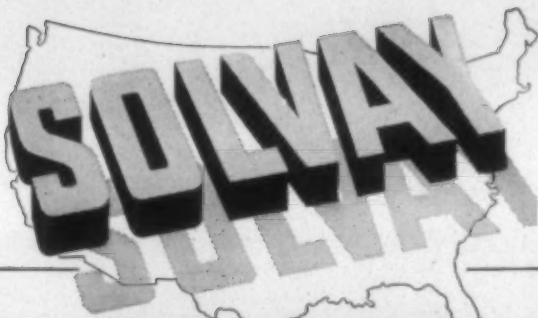
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1943 A. S. T. M. Standards On Textile Materials Now Available

In addition to each of the 78 standard specifications, tests and definitions, etc., issued by the American Society for Testing Materials in its work in the field of textiles, the recently issued 1943 compilation includes considerable other related information and data on calculation of number of tests for textile materials, a yarn number conversion table, humidity tables and abstracts of papers. Also furnished are several tests published for information and comment, for example, on accelerated ageing, designation of yarn construction, etc. The extensive glossary of terms gives a list of man-made and natural fibers, defects in woven fabrics—definitions and photographs, and terms relating to hand of fabrics.

The first 90 pages provide general standards on such subjects as air permeability, colorfastness to light, finishes, fire-retardant properties, resistance to insect pests, and to micro-organisms, and to water. Six standards pertain to asbestos tape and four to bast and leaf fiber products, jute, etc. There are 26 standards on cotton; four pertaining to various types of glass—yarn, fabrics, tubular sleeving and braids, and glass tapes. Another section of this widely used book gives requirements on rayon and silk and there are nine standards on wool and its products. Included in this year's compilation is the presidential address by H. J. Ball, professor of textile engineering, Lowell (Mass.) Textile Institute, on "The Relation of the A. S. T. M. to the Textile Industry," and other papers dealing with synthetic textile fibers and the Balls sledge cotton sorter. Copies of this 440-page publication can be obtained from A. S. T. M. headquarters, 260 S. Broad St., Philadelphia 2, Pa., at \$2.25 per copy.

The Cotton Council's Plastics Program

(Continued from Page 18)

is based upon the difficulty being experienced by manufacturers of laminates in obtaining standard fabrics, and the council's study will seek to standardize materials for this use. Sizing, bleaching and de-sizing of special fabrics will be carried on by the council in the study.

An extensive study of the blending of cottons has been started by the council research division, with work being done in laboratories of the University of Texas at Austin. The effects of mixing cottons of widely varying average staple lengths are being checked to determine their influence on the processing and qualities of the yarn.

The study is intended ultimately to measure the results of blending cottons of varying fiber properties, including strength, fineness and maturity, as well as length. Already incorporated into the study is an analysis of the influence of maturity, or the influence of thick or thin-walled fibers on the yarn.

With the co-operation of the Mexican Department of Agriculture, special cottonseed being used in the research division's seed-breeding study already has been planted on a winter breeding tract near Acapulco, and proper care of the plants during the growing season has been assured. Special acreage at a field station operated by the department was set aside for planting the seed. A well located at the station will provide proper irrigation. The planning was supervised by an associate director of the research division.

Seed from the plants will be harvested next April for

planting May 1, on an experimental tract at Las Cruces, N. M. A plant selection will be made at that time to eliminate undesirable strains. Use of the winter breeding acreage in Mexico was arranged to speed up the breeding study by permitting the harvesting of two generations of seed in one year.

Final Cotton Crop Estimate Is Set At 11,478,000 Bales

A United States cotton crop of 11,478,000 bales of 500 pounds gross weight was reported by the Agriculture Department Dec. 8 as its final estimate of the year. This is an increase of 36,000 bales over the forecast made in November.

The Crop Reporting Board said the most recent estimate is approximately 1,100,000 bales below that expected on Aug. 1, when the first forecast of the season was made. The crop got off to an unusually good start, but dry weather and insects in August and early September caused considerable damage, especially in Tennessee, Arkansas, Oklahoma and Texas. Some further reduction occurred in the northern fringe of the cotton belt as the result of killing frost in October. The department said that cotton still unpicked on Dec. 1 was less than average except in the western irrigated states.

The Census Bureau reported that ginnings of this year's growth to Dec. 1 totaled 10,559,989 running bales, compared with 11,534,702 to that date a year ago, and 9,592,229 to that date two years ago.

Area for harvest this year was reported to be 21,874,000 acres, compared with 22,602,000 acres last year, and the 1932-41 ten-year average of 27,718,000 acres.

The yield of lint cotton to the acre this year is 252 pounds, compared with 272.4 pounds last year, and 217 pounds, the 1932-41 average yield.

The acreage for harvest, acre yield, average gross weight of running bales, and total production, by states, follow:

Missouri, acreage 366,000, yield 386,000 pounds, and production 295,000 bales of 500 pounds gross weight; Virginia, 34,000, 353 and 25,000; North Carolina, 846,000, 337 and 595,000; South Carolina, 1,145,000, 291 and 695,000; Georgia, 1,610,000, 254 and 850,000; Florida, 45,000, 176 and 17,000; Tennessee, 720,000, 326 and 490,000; Alabama, 1,620,000, 283 and 955,000; Mississippi, 2,470,000, 358 and 1,840,000; Arkansas, 1,870,000, 285 and 1,110,000; Louisiana, 1,005,000, 352 and 735,000; Oklahoma, 1,525,000, 121 and 385,000; Texas, 8,000,000, 172 and 2,860,000; New Mexico, 112,000, 475 and 111,000; Arizona, 203,000, 329 and 139,000; California, 285,000, 607 and 360,000.

Arkansas Seeks To Obtain Mills

Governor Homer M. Adkins of Arkansas asserted recently that the Arkansas Agricultural & Industrial Commission had engaged "a leading engineering firm in the cotton textile industry to prepare a report on Arkansas' possibilities for obtaining small textile plants."

"It is high time," said Governor Adkins, "that we began to reap the full benefits of our cotton crop, and not continue to hold the bag, so to speak, while the Eastern textile manufacturers rake in the profits from our raw materials. One of these textile plants might fit into your plans."

TO HELP YOU *Keep The Pace!*



THE Textile Industry is doing a magnificent job in meeting the demands of our Armed Forces and our Allies, as well as our essential civilian requirements. Production in 1942 was *twice* that of a normal year. The Quartermaster General has stated on several occasions that the Textile Industry has kept well ahead of schedule on all major types of fabrics required . . . and that includes some 300 different fabrics specified by the Quartermaster Corps alone.



It is *our* job to help the Textile Industry to maintain the pace it has set, by supplying the finest leathers for check straps and belting that it is possible to produce. Many of the country's leading mills have found that, by specifying Shingle & Gibb Leathers, they get *longer* check strap and belting life. And that's what counts today! If your regular supplier can not furnish Shingle & Gibb Leathers, write to us for the name of one who can.



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for Check Straps and Belting

Amioca—A New Industrial Starch

(Continued from Page 20)

be used satisfactorily for a number of purposes where tapioca has been used previously.

Stein, Hall trials with Amioca starch for textile warp sizing, finishing and printing showed results for warp sizing and finishing comparable with those obtained with potato starch and tapioca flour. Cotton warps sized with Amioca remain pliable and do not require high humidity in the weave room, which is necessary when regular corn starch is used. Fabrics finished with Amioca have the fullness of hand characteristic of those finished with tapioca and potato starch.

The first commercial milling test on waxy maize was made in January, 1942. As was anticipated, it handled about like ordinary corn in the milling operations. However, certain disadvantages of the waxy maize were observed. The yield of starch and oil were somewhat lower than usually obtained with ordinary corn and some difficulty was met with in the settling and filtering of the protein for incorporation in feed.

In considering the properties of Amioca starch, it must be emphasized that recent advances in the knowledge of starch chemistry have shown that Amioca and starches from waxy or glutinous grains other than corn, differ from all other naturally occurring starches in that they possess only one component, i.e., amylopectin. Other commercial starches are composed of both amylopectin and amylose. The characteristic properties of amylopectin are clarity, stability in solution, lack of tendency to gel, and adhesiveness, while amylose is characterized by its tendency to gel and retrograde or thicken in solution and thus is responsible for the gelling characteristic and opaqueness of ordinary corn starch.

In order to better understand the significance of the fact that Amioca contains only amylopectin, it is helpful to trace the recent developments that have clarified our conception of starch structure. Separation of starches into two components has been accomplished in several ways. Starch has been extracted with water at a temperature below the gela-

tinization point of starch. In this way the amylose fraction was partially removed, leaving behind the amylopectin. From quantitative estimation of the dimethyl, trimethyl and tetramethyl glucoses resulting from the hydrolysis of methylated starch, amylose and amylopectin, it has been shown that amylopectin consists of a branched structure of glucose chains while amylose consists of straight chain molecules such as are found in cellulose. Amylopectins have been found to have average molecular weights, considerably higher than those for amyloses.

The Iodine Element

One difficulty presented by picturing the properties of starch as dependent on the presence or absence of the amylose fraction is that corn and potato starches, although entirely different in properties, show approximately the same content of amylose. One explanation was indicated when it was noticed that the amounts of iodine found in complex formation by amyloses from corn and potato starches were different. The viscosities of various samples of amylose were investigated to confirm the belief that amylose molecules are linear and that differences between the various ones are due to differences in chain length. Amylose from potato starch is believed to consist of much longer molecules than amylose from corn starch and this then would explain the reduced tendency of potato amylose to gel or retrograde since the longer chains would have more difficulty in becoming parallel to one another for precipitation or crystallization. It should be pointed out that the non-gelling character of amylopectin is attributed to the branched nature of the molecules which prevents the orientation taking place that is necessary for precipitation or retrogradation. Just as the amyloses from different sources have different molecular weights so also do the amylopectins. In addition, it has been indicated that the degree and extent of the branching of amylopectins from different starches may show some variation. The amylopectin from ordinary corn starch is thought to be very similar to Amioca.

An important result of the fact that Amioca contains no

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amylose is that modified products such as thin-boiling starches made by wet acid hydrolysis retain the fluidity and non-gelling character of the original starch. This is in strong contrast to both potato and tapioca starches whose acid conversion products tend to be unstable and gel up because of the presence of shortened amylose molecules.

It has been reported that Amioca starch gelatinizes sharply starting at 70° F. and proceeding over a range of only 8°. This is in contrast to ordinary constarch which begins to gelatinize at 64° and continues over a range of 30° or more. The hot viscosity of dilute Amioca starch pastes has been reported greater than that of tapioca at temperatures of 75° to 90° F.

Development Pushed

Considerable impetus has been given to the development of Amioca because of the curtailment of importations of tapioca starch. There was before the war an annual tapioca consumption in the United States of 350,000,000 pounds. Much of this has been replaced by corn starch. However, it is estimated that from 75,000,000 to 100,000,000 pounds of tapioca are used for purposes where the properties of tapioca make it superior to other starches. It is believed that Amioca starch, together with the dextrines and other modification to be made from it, will be of particular interest to the textile industry.

In considering the commercial development of Amioca starch, it should be pointed out that its economic future is uncertain inasmuch as after the war it will have to compete with tapioca and related starches from Brazil, San Domingo and other countries in the West Indies, East Indies and Holland. A considerable quantity of these starches is accumulating in these countries and as the cost of growing waxy corn and milling it into starch is appreciably higher than that of regular corn starch, it is difficult to see how Amioca will be able to compete if large quantities of tapioca are again imported at relatively low prices. As the present status of the tapioca plantations in the Dutch East Indies now in Japanese possession is unknown, it is impossible to predict how soon after the war tapioca shipments from the Far East will be resumed.

As has been indicated, Amioca may prove to have advantages for certain uses since it is the only commercial starch available that consists solely of amylopectin. Confirmation of its advantages awaits more thorough commercial trials of Amioca and modified Amioca products and the possible development of new uses of starch for which Amioca is better suited than any other.

The future of Amioca and the rate of its expansion for industrial uses depends on general business conditions both now and after the war, according to Stein, Hall.

Employee Training Is Discussed

Representatives of 25 textile manufacturing plants were present for a conference at Charlotte, N. C., recently in which the training of new workers was discussed with training agency leaders of the War Manpower Commission.

Among the textile organizations represented were Chadwick-Hoskins Co., Kendall Mills, Scandinavia Belting Co., Carolina Asbestos Co., and Barber Mfg. Co., all of Charlotte, Erwin Cotton Mills Co. of Durham, N. C., and the Southern Combed Yarn Spinners Association.

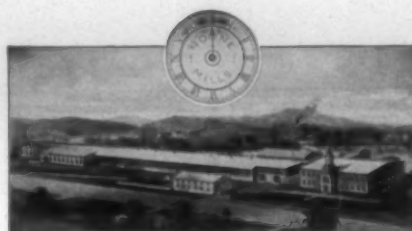
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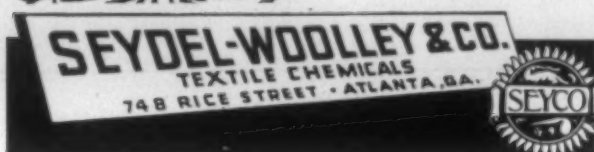
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Many Future Uses for Firestone's Velon Are Predicted

Product designers everywhere are planning to re-build and re-fashion the troublesome world of today into a lovely and practical new world of tomorrow with the help of many recently discovered materials and processes that were developed and improved under the driving impetus of war-time necessity.

Synthetic materials of almost unbelievable properties and fascinating appearance, of which "velon" is an outstanding example, are already writing new chapters in industrial and artistic progress. Not only will they replace and enhance in value a vast number of pre-war products, but they will lend themselves to the creation of new industry to help re-build a more stable world of tomorrow. They can be compounded and processed to cover an enormous variety of applications, according to Firestone Industrial Products Co., of Akron, Ohio.

Firestone developed velon to accomplish what was never before possible—beauty combined with lasting and non-soiling qualities. Velon has tremendous tensile and flexural strength; is practically impervious to water, most acids, alkalies and other solvents; is hard, tough, flexible, ductile, machinable, heat-resistant at ordinary temperatures and is not inflammable.

Velon has high abrasion resistance; can be extruded into tubes or strips, drawn into threads and the finest of filaments. It is glossy and beautiful; may be had in any color, and can be woven into fascinating, multi-colored designs. The wearing qualities of velon fabrics are almost incredible; they can be easily cleaned with a damp cloth, and they continue to look new. It is said that product designers are turning more and more to velon for new styling, new color combinations, new designing. A spot of ink, a blob of grease, rain—continued sunlight—termites, moths, vermin—long use or disuse—often spell ruin to the ordinary fabrics of commerce. None of them are harmful to velon.

Railroad and bus seats, upholstered in velon and in continuous service for many months, look brand new when simply cleaned with soap and water.

Velon screen is another material for modern construction. A home owner or architect can select the proper color to harmonize with the house trim or with the interior drapes or furnishings, something that has never been possible with metal screen. Velon screen does not rust or tarnish. It is harmoniously colorful, strong, tough and long-lived. It is less affected by temperature and weather changes than metal screen. In the tropics, where insects are a scourge, insect-proof tents made of velon are establishing new records for efficiency.

Aluminum Fibers Hold Possibilities

David O. Woodbury, writer of "Your Life Tomorrow," a regular feature in *Collier's*, had the following to say recently concerning fabrics made of aluminum:

"A single pound of aluminum alloy, a war plant has discovered, can be rolled and cut into a gossamer fiber six miles long. Once the fighting is over, this technique will provide the women of the world with a brand-new sensation in wearing apparel and decorative material. Yarn made of the metal alone or combined with other threads will be

woven into dresses, hats, draperies and fabrics for every imaginable use. Pocketbooks, shoes, costume jewelry and bathing suits are only a few. The most exciting possibility is table linen which would sparkle as brilliantly as the crystal and silver set upon it.

"Aluminum-woven fabrics will have a warm luster all their own. Though light as a feather, they will be tough and at the same time flexible. They will not tarnish from perspiration or prolonged exposure to the air, and can be cleaned perfectly. A damp cloth will remove most spots. Being flat, the metal yarn will not scratch. In combination with cotton or wool, it will not be cold to wear. The greatest attraction of the new textile will be its unlimited range of colors, including perfect imitations of gold and silver. Yet, in spite of these many good points, it will not be expensive."

WPB Announces Personnel of Three Industry Advisory Committees

The War Production Board recently announced the formation of three industry advisory committees, for rayon high tenacity tire-type yarn producers, cotton blanket, and wool blanket manufacturers.

Government presiding officer of the rayon tire yarn committee is Harry L. Dalton. Members are J. L. Bitter, North American Rayon Corp.; Frank Griffin, American Viscose Corp.; Hayden Kline, Industrial Rayon Corp.; J. L. Moritz, American Enka Corp.; and H. J. White, E. I. du Pont de Nemours & Co.

John Powell is the Government presiding officer of the cotton blanket advisory committee. Members include Boughton Cobb, Esmond Mills; Frank J. Digney, Arnall Mills; Lawson Ivie, Marshall Field & Co.; Robert Morse, W. S. Libbey Co.; S. C. Owen, Beacon Mfg. Co.; Thomas Sheehy, Chatham Mfg. Co.; Robert Shumaker, Nashua Mfg. Co.; Donald Tansill, Pepperell Mfg. Co.; and R. A. Willis, Manetta Mills, Inc.

Carroll D. Newell is in charge of the wool blanket committee, which met for the first time last month. Members are Boughton Cobb, Esmond Mills; James Corson, Pearce Mfg. Co.; C. E. Hafford, Horner Woolen Mills Co.; Elmer Hahn, Lebanon Woolen Mills; O. W. Roesing, North Star Woolen Mill Co.; Tom Sheehy, Chatham Mfg. Co.; Robert Shumaker, Nashua Mfg. Co.; George Swift, American Woolen Co.; Donald Tansill, Pepperell Mfg. Co.; and W. W. Weed, F. C. Huyck & Sons.

Armstrong Gives Christmas Bonus

A Christmas bonus to employees of Armstrong Cork Co., Lancaster, Pa., equal to two per cent of wages or salary received during the past 12 months, will be distributed Dec. 24. H. W. Prentis, Jr., company president, has announced. The distribution will be made to all employees of the company in the United States actively employed on Dec. 4, with the exception of members of the board of directors, the announcement said.

At the same time, the directors declared a dividend, final for the year 1943, on the company's common stock of 35 cents a share payable Dec. 24, 1943, to stockholders of record Dec. 6, 1943. This brought the year's dividends on common stock to a total of \$1.35 a share, the same as for 1942.

TEXTILES' VITAL ROLE IN WINNING THE WAR (No. 9 OF A SERIES)

"SHOULDER ARMS"

*For the Textile
Chemist and Dyer*



Far from the field of battle . . . armed only with the equipment of the laboratory and his own trained faculties, the Textile Chemist and Dyer nevertheless plays a dynamic role in winning the war. The men in the armed forces have reason to be grateful to him for their comfort . . . for the protection of their equipment . . . often for their lives.

Textile mills count on Burk-Schier Wet Processing Agents for help in processing all sorts of fabrics. Different characteristics are needed to suit varying military and civilian fabrics . . . new problems must be tackled every day. It's a big job . . . but the Textile Chemists and Dyers are successfully making fabrics fit to fight, here at home, as well as at the front.



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(Continued from Page 16)

on with delicate laboratory apparatus and the most careful standards of precision, have all been made free of charge.

In some cases these tests have even been carried to the extent of spinning the sample cotton into yarn, fashioning the yarn into cords, making tires with the cords, and running the tires through a series of rigid laboratory tests. The data thus gathered has been partly responsible for starting several new cotton strains into commercial production.

The variety tests have been carried out with the assistance of cotton growers from North Carolina to Arizona. Co-operating growers were each furnished with five to ten varieties and asked to plant a half-acre of each. Often these growers, because of their interest in the work, would put experimental patches on the edge of the road so that all growers in the neighborhood might easily watch the progress of the experiments.

The history of these cottons is carefully kept from the time the seed is planted until the cotton is destroyed in a tire test. Measurements are made of the cotton at all stages of manufacture—on the cotton fiber, the yarn, the cord, and the finished tires. Thus any characteristic of the cotton fiber can be co-ordinated with any given part of the record of yarn, cord, or finished tire.

The experience with the Wilds 9 strain of cotton already alluded to is illuminating as to the possibility of this type of research.

In Arizona, the varieties permitted to be grown in the state are carefully controlled. In 1939, the Arizona authorities reluctantly permitted the Goodyear company to ship in 25-pound lots of seed of ten varieties for a variety test. Wilds 9, originated by a plant breeder in South Carolina, was one of these ten varieties.

Only a half-acre of Wilds 9 cotton was grown in 1939 from this original 25 pounds of seed. It proved so excellent, however, that the strain has been eagerly taken up by growers in the state, and by 1942 there were 2,000 acres of this and closely related strains in Arizona. It is rapidly attaining major importance.

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Expect Cotton Demand To Be Huge Following War

Surviving the post-war outlook for cotton, the Bureau of Agricultural Economics recently pointed out that the war has depleted supplies of cotton textiles in Axis and Axis-dominated countries, as well as other nations dependent on imports of cotton and/or textiles.

Though the Axis countries themselves have made themselves largely self-sufficient in regard to textiles through expanded production of rayon, large quantities of cotton textiles will be needed in the immediate post-war period, BAE said.

Hampering the satisfaction of these needs, however, will be the low purchasing power of the peoples, and it will not be until after the period of relief and rehabilitation that the highest level of consumption of textiles will occur, BAE stated.

Another factor will be the need for reconditioning textile machinery. The difficulty of this problem will depend on the extent to which the enemy employs the scorched-earth policy.

Through conceding a leading position to cotton as a textile fiber after the war, the BAE forecast still further inroads by synthetic fibers such as rayon, nylon, aralac and spun glass.

Though the world carryover of American cotton has shrunk during the war period, that of foreign growths has climbed considerably, from 7,500,000 to 12,400,000. American has declined from 14,100,000 to 11,500,000. The world carryover of all cotton on Aug. 1 was 23,900,000 bales, and is likely to be at record or near-record levels at the end of the war, according to BAE.

This large backlog will be largely held by export-producing nations, BAE stated, and at prices substantially below the level at which government-held cotton in the U. S. can now be sold.

"The resumption of an active import demand for cotton after the war, therefore, will probably see foreign cotton moving into consumption at substantially lower prices than would bring forth supplies of American cotton inasmuch as, under the Steagall Amendment, the price of American cotton must continue to be supported now and for two years after the war by means of a 90 per cent of parity loan."

Manhattan Issues New Catalog

Printing of the golden anniversary edition of "Manhattan Rubber Products for Industry," a 140-page catalog of industrial rubber goods, has been completed by the Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J. Copies are available on request.

Described in this new catalog are hundreds of mechanical rubber products and many other special items manufactured by Manhattan, many available only for post-war use. Particular emphasis is given belts, hose, molded goods, packing, lathe cut and extruded rubber goods, friction material, rubber covering and abrasive wheels. Also contained in the catalog is a brief history of the company and special sections devoted to the three fundamentals of Manhattan and Condor products, namely, "Flexlastics," "Strength Members" and "Manufacture and Design."

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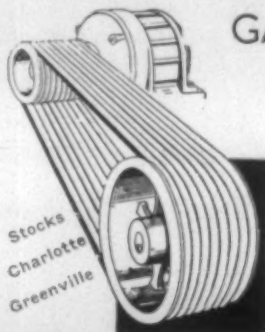
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New Bedaux Booklet Outlines Improvements In Plant Operation

Methods of improving utilization of manpower resources and plant facilities through co-operation between management and labor are outlined in a booklet entitled "Production Management" recently issued by the Bedaux Co., industrial engineers. The booklet gives a non-technical explanation of the production management methods employed by the Bedaux organization, which are in use in approximately 1,000 industrial plants in the United States and Canada.

Pointing out that the widespread use of sound production management methods could add the equivalent of 4,000,000 new workers to war industries, the booklet states also that "industry with its house in order will be better able to make its due contribution to the re-building of a post-war economy in which more and better things will be available to all."

Sections of the pamphlet are devoted to work measurement and production control, method improvement, labor cost and expense control, supervision and indirect labor, planning and scheduling, job evaluation, incentive wage plans, and other phases of plant operation. In the discussion of wage plans it is pointed out that wage incentive based on sound principles usually results in extra pay ranging from 10 to 40 per cent above the regular base rates, along with substantial increases in productivity and reductions in unit costs. The elements of a correct incentive wage plan are outlined in detail, the importance of getting the workers' co-operation being strongly emphasized.

"In many plants," the pamphlet states, "the workers have participated in the determination of work standards and in the introduction of production control methods. This has been found to be one of the best ways to secure the understanding and co-operation of the workers involved."

The foundation of sound production management, the booklet points out, is accurate information to guide both management and labor and enable them to work together on a businesslike basis. "Management's failure to know the facts," it states, "is at the bottom of many labor difficulties in industrial plants. Analysis of the differences between actual and potential performance permits management and labor to recognize the sources of unutilized time or mis-directed effort. With this precise knowledge, corrections are made easier and more effective."

In discussing the role of the consulting engineer, the pamphlet states: "Good training of an organization along proper lines is a permanent asset far outlasting any direct benefits obtained when the consulting engineer is on the job. What the consulting engineer can do by himself is not as important as what he can get others to learn and do."

Sub-Contracts in Certain Areas Discouraged

Prime contractors have been requested by the War Production Board to cut down further on the placement of sub-contracts in tight labor areas and to utilize to the utmost the less critical areas for sub-contracting.

In a letter to major prime contractors, Charles E. Wilson, executive vice-chairman of the War Production Board, stressed the necessity for bringing labor supply and production requirements into balance, and asked that suggestions on how to relieve the pressure on critical labor areas be for-

warded to WPB's procurement policy division. Mr. Wilson's letter said:

"You have been receiving monthly letters on particular aspects of the problems of effecting more sub-contracting in the less critical labor areas so as to relieve the more critical labor areas. As you well know, manpower shortages are increasing.

"To help forestall the necessity of further extension of stringent area controls, your co-operation is essential. This requires cutting down further on the placement of sub-contracts in Group I labor areas (unless delivery is to be made to plants in the same area). Furthermore, you have a responsibility to refrain from taking sub-contracts for your plants that are in Group I labor areas, if you know of adequate suppliers in Groups III and IV labor areas."

Some Rayon Weaving Facilities To Resume Civilian Production

A substantial percentage of rayon weaving facilities now operating on Army contracts are expected to be freed for production of civilian fabrics as a result of the recent Army cut-back in procurement of fragmentation bomb parachutes, officials of the War Production Board's textile, clothing and leather division said recently. Fragmentation bomb parachutes are used in delayed-action bombing, which has been employed widely in the various war theatres.

Following consultation with War Department officials, it was revealed that as a result of changed military requirements of the air forces, a part of the fragmentation bomb parachute program would be canceled within two or three weeks following the announcement.

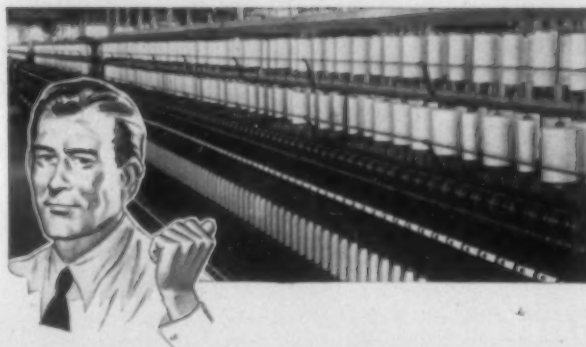
The action, WPB officials said, will release a considerable number of looms for output of urgently needed civilian types of rayon fabrics. It is not possible at the present time to say exactly what percentage increase over present output of rayon fabrics will result, the officials said, but some relief is expected for the current tight civilian rayon fabric picture. Nevertheless, too much optimism should not be attached to the move, it was emphasized. At best, only relatively moderate quantities of rayon fabric are expected to be made available to civilian goods manufacturers.

The decision to cut back the procurement of parachutes was made solely on the basis of changes in the military requirements and should not be interpreted as an indication of any dissatisfaction with the fragmentation bomb parachutes. The War Production Board has emphasized that whatever facilities are freed as a result of the cut-back will be absorbed by the large civilian demand for rayon fabrics.

American industry has prided itself over a period of years on the fact that nothing is wasted. The Army's Quartermaster Corps, which is "big business" spelled in double capital letters, is no exception to this rule.

Webbing scrap, duck scrap clippings, duck remnants, felt scrap, leather scrap and miscellaneous cuttings accumulate largely from various contractors engaged in war production under procurement agreements with the Jeffersonville (Ind.) Quartermaster Depot, and constitute the main salvage sales from month to month.

Any business enterprise which thinks that it might be interested in salvage items handled by the Jeffersonville Quartermaster Depot is encouraged to communicate with Capt. James W. Hoague, salvage officer of the depot.



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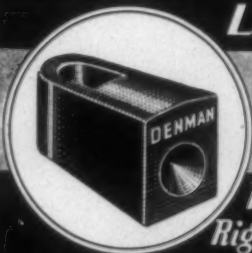
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SOLVES THE MILDEW AND BACTERIA PROBLEM

in Military Fabrics

MILLIONS OF YARDS of military textiles have been . . . and are being . . . conditioned against the destructive action of mildew and bacteria and made antiseptic by PURATIZED*—the lasting mildew- and bacteria-resistant finish.

So great is the demand for PURATIZED formulations by manufacturers with war contracts that PURATIZED may not, at this time, be supplied in any great quantity for the finishing of civilian materials. In treating mosquito netting, jungle hammock covers, ground cloth, duck, pneumatic float and boat materials, and a long list of other supplies for the Army, Navy, Marine Corps, Coast Guard, and Maritime Commission, war contractors have found PURATIZED a practical finish that meets the severe Government specifications for mildew and bacteria resistance in military textiles.

When all war orders are filled, PURATIZED will be available, in abundant

quantities. Then textile products of every kind—domestics, napery, draperies, towelings, carpetings, dress goods, and countless PURATIZED articles—will offer the textile industry a sensational postwar merchandising opportunity. For all these textile items, when PURATIZED, become lastingly bacteriostatic, fungistatic, mildew-resistant . . . hence longer lasting and more serviceable.

Other industries, such as paint, paper, leather, plastics, rubber . . . already using PURATIZED to finish important war goods . . . will benefit when we have won this war and peace comes again, from the laboratory-tested and war-proved qualities that PURATIZED gives to their consumer goods. We regret that vital war

duties make it impossible to fill sizable orders for civilian consumer goods at present. However, limited quantities of PURATIZED formulations are available to textile manufacturers for research purposes.



TRADE-MARK

GALLOWHUR & COMPANY, INC.

250 E. 43rd Street, New York 17, N. Y.

*TRADE-MARK REG. U. S. PAT. OFF.

The Four E's of Business

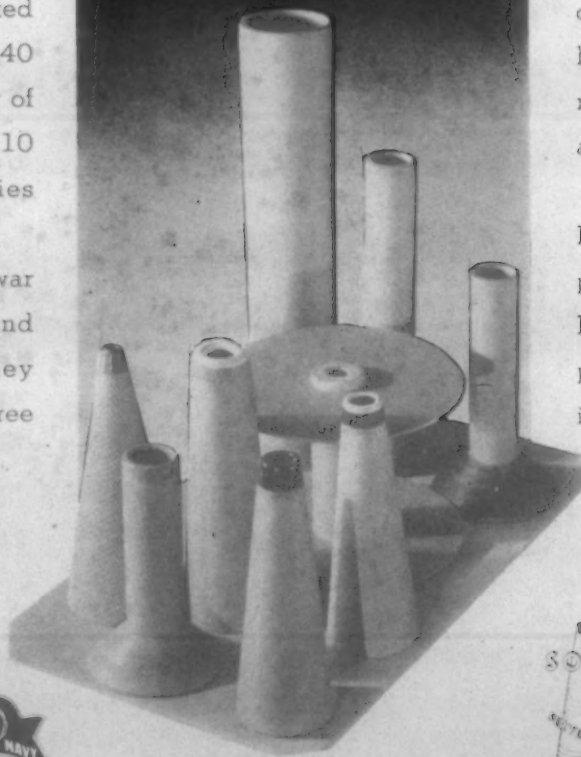
**Experience and
Equipment
that SPELL
Efficiency and
Economy**

When the war started SONOCO had more than 40 years experience in *back* of them, with an estimated 10 years expansion facilities *ahead* of them.

In spite of tremendous war demands on manpower and productive capacity, they have managed a high degree

of dependability in keeping both war consumers and normal customers efficiently and economically supplied.

The American System of Free Competitive Enterprise developed the Four E's of Business which have proven out at SONOCO, both in war and peace.



SONOCO MAKES EVERYTHING IN PAPER CARRIERS

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DEPENDABLE SOURCE OF SUPPLY